

HONEYWELL

S.P.G. 2000

SITE PREPARATION  
MANUAL FOR  
LEVELS 66 & 68 AND  
DPS 8/52, 8/62 & 8/70  
SYSTEMS

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SYSTEMS PROGRAMMING

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SYSTEMS PROGRAMMING

**SITE PREPARATION MANUAL  
FOR LEVELS 66 & 68 AND  
DPS 8/52, 8/62 & 8/70 SYSTEMS**

**SUBJECT**

Instructions for Preparing a Level 66, Level 68, or DPS 8/52, 8/62 & 8/70 System Site

**SPECIAL INSTRUCTIONS**

This edition supersedes the *DPS 8/52 & 8/70 Site Preparation* manual, Order No. DL63-00, dated June 1980, the *Levels 66 & 68 Site Preparation* manual, Order No. DC79, dated July 1978 and its Addendum A DC79A, Rev. 3, dated April 1979. The entire manual has been reorganized and revised; therefore, change bars and asterisks are not used.

The following notice is provided in accordance with the United States Federal Communications Commission's (FCC) regulations.

**Warning:** This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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**Honeywell**

## PREFACE

The primary purpose of this manual is to assist you in planning your system site. Remember, however, a successful installation depends ultimately on how well you allocate individual responsibilities and how carefully the overall site planning and follow up work is performed.

This manual guides you through all phases of site preparation planning whether your engineering personnel or outside consultants formalize the site preparation requirements. To help achieve an efficient computer installation, observe closely the design requirements and recommendations outlined in this manual.

This manual includes information for site preparation planning, site facility requirements, sample site layouts, individual device specifications and planning templates.

Purchased or leased systems (excluding purchased systems for which no installation is contracted) are installed by Honeywell Customer Services personnel who are available throughout the various phases of installation and systems checkout.

A postpaid feedback remarks form is provided in the back of this manual. Comments from the users of this manual are appreciated.

The information and specifications in this document are subject to change without notice. This document contains information about Honeywell products or services that may not be available outside the United States. Consult your Honeywell Marketing Representative.

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DL63-01

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## SECTION 1 INTRODUCTION

The purpose of this manual is to assist the customer in the planning and preparation of the site for the installation of Honeywell's DPS 8/52 (CPS8183), DPS 8/62 (CPS8184), DPS 8/70 (CPS 8187), Level 66 or 68 Information Processing System. The manual is divided into eight sections, which are described below.

Section 1, Introduction, briefly outlines the contents of the manual.

Section 2, Site Planning, describes the site planning tasks from start to completion. The entire site preparation is outlined.

Section 3, Site Facility Requirements, is intended to aid you in selecting and preparing the area where your system is to be installed. It provides information concerning the space requirements, construction, lighting and other area requirements.

Section 4, Site Power Requirements, describes the system power requirements and provides information pertinent to the installation of the primary power wiring.

Section 5, Site Environment Requirements, specifies the air conditioning and air cleaning needs of the system.

Section 6, Site Support Equipment, describes the installation criteria for auxiliary equipment used with your system.

Section 7, Safety Precautions, recommends safety procedures and certain types of protective equipment which should be utilized on the system site.

Section 8, Installation Planning, consists of summary information and Installation Outline Drawings. The Installation Outline Drawings contain the specifications for Honeywell supplied data processing equipment which may be installed on your site.

It is suggested that you review this manual in its entirety before starting your site plan. Honeywell representatives are available to assist in interpreting this manual and to help in resolving situations not covered by this manual.



**SITE PREPARATION TASKS**

Before starting site planning and preparation, you may want to make such arrangement as you deem necessary for professional consultant services. Also, Honeywell representatives are available to assist you in planning your site. A Honeywell representative must be contacted if any characteristic of the site does not meet the requirements specified in this manual.

Table 2-1 outlines the sequence of events in Site Planning and Preparation. It describes the steps to take and the assistance Honeywell offers during system installation. It does not apply to any equipment designated by Honeywell as a customer installable unit. In some cases, when a schedule changes, the sequence of events may vary.

**TABLE 2-1. INSTALLATION RESPONSIBILITIES**

What You Do	What Honeywell Does
<p>1. Select the site for your Honeywell computer system.</p> <p>(Refer to Code Requirements in this section.)</p>	<p>Honeywell representatives can help you decide among possible sites (whether existing or new) and help you determine the applicability of the selected site for the layout. Using the building specifications you supply, Honeywell can help you develop a system layout (typical site layouts are shown in Section 2 of this manual).</p>
<p>2. Prepare the site.</p> <p>(Refer to Code requirements in this section.)</p>	<p>This manual provides site related product specifications for the use of your plant engineer, architect or outside consultant in installing the air conditioning and electrical power required for your particular system and its associated peripherals.</p> <p>Before system delivery, Honeywell Customer Services Site Planner can audit your completed site to help ensure the successful installation of the computer. Section 8 contains a blank site layout work sheet which can be used for planning your site layout.</p>

TABLE 2-1 (CONT). INSTALLATION RESPONSIBILITIES

What You Do	What Honeywell Does
<p>3. Agree with Honeywell on a shipment date for the system (a tentative shipment date should be established at the time the contract is signed).</p>	<p>System components are carefully packed and readied for safe shipment from the factories to your site. Honeywell ordinarily selects an independent carrier and the method of delivery.</p>
<p>4. Alert your Honeywell Marketing Representative if delivery impediments exist or are anticipated (e.g., small elevator, second floor delivery, no receiving dock, etc.)</p>	<p>If the carrier is selected by Honeywell, Honeywell will notify the carrier of anticipated delivery problems.</p>
<p>5. Accept the delivery and record any damage to the equipment or containers. Declare exceptions before signing to accept delivery. Notify your Honeywell Representative upon system arrival. The carrier (van lines only) is to move all equipment including those in cartons or on skids and/or pallets into the computer area. This equipment must be removed from the cartons, off the skids and pallets, then be placed in accordance with the plan layout.</p>	<p>When your equipment arrives, Honeywell Customer Services will:</p> <ul style="list-style-type: none"> <li>● Supervise unpacking while movers position all Honeywell equipment components in accordance with your layout.</li> <li>● Inspect cable routing, physically connect approved standard length Honeywell interconnecting signal and control cables, and where applicable connect the AC plugs.</li> <li>● Check out the system by performing certain test and verification routines.</li> </ul> <p>Honeywell is responsible for installing and making ready for use equipment covered by the specific contract.</p>
<p>6. Install fiber optic cables and any special length or custom cables. (Refer to Section 8 for fiber optic cable information.)</p>	<p>Honeywell will check the fiber optics cable before and after installation and connect the cable to the equipment.</p>

Code Requirements

It is important that both local and national code requirements be adhered to in the construction of your site. The national codes are contained in the National Electric Code, NFPA 70 and the Standards for Protection of Data Processing Equipment, NFPA 75.

These documents may be obtained from:

National Fire Protection Association  
Batterymarch Park  
Quincy, MA 02269

Local codes should be obtained from your local building inspection department.

### Site Selection

The selection of the site for your Honeywell computer system is one of the most significant factors in planning and preparing for your system's installation.

The choice of a location for the computer facility should be based on the applicable requirements for: aggregate space, clearance and floor load for the computer and peripherals; air conditioning, electrical power, safety and fire prevention equipment; support functions and equipment; audible noise levels; adequate delivery capabilities; storage space and expansion of the system. These considerations apply to both new and old buildings.

Outlined below are some major site considerations that should be answered prior to selecting your computer site.

- Is space available to house the air conditioning equipment: the compressor, air handlers, evaporators, condensers, and cooling tower equipment?
- Is electrical power available and adequate?  
Are outlets sufficient as to type and location?
- Is there a separate room for the motor generator, (MG)?  
(This is not applicable where the MG is not required such as when the customer is furnishing an uninterruptible power supply, or the ride-through options are installed in the central system and freestanding controllers.)
- Is the lighting adequate?
- Is the floor of the computer area structurally adequate to sustain the computer's weight together with any other loads that may be imposed on it, or will floor load limits be exceeded?
- The ceiling must be a minimum of 8 ft 6 in. (2.6m) from the top of the raised floor for the Honeywell systems defined in this manual.
- Do the surrounding walls and ceiling have any type of existing acoustical treatment to help reduce noise?
- Are permanent walls and partitions located to help reduce noise?



- Is the accessibility for the delivery van unloading adequate?
- If the building (or facility) is more than one story high, is the elevator accessibility and capacity adequate?
- Are there any building modifications necessary before moving in the computer equipment?
- Is the air filtration system (air cleaners) adequate?

**CAUTION**

**YOUR HONEYWELL COMPUTER EQUIPMENT MUST NOT BE OPERATED WITH CONDENSED MOISTURE PRESENT OR IN A DUST-LADEN OR CORROSIVE ATMOSPHERE.**

- Is the fire and smoke detection system adequate?
- Is the fire extinguishing system adequate?
- Are support function areas (e.g., office space, media storage and equipment maintenance area) satisfactory?
- Are the related work areas suitable?
- Are the size and location of entrances and exits adequate for equipment delivery.
- Is there room for growth? Can new equipment be added, when necessary, without causing radical changes to the currently allocated space?

Some additional factors you might consider are:

- Insurance costs can be affected by the type of building construction used and by the location of the site in relation to fire hazards and firefighting facilities.
- Zoning regulations may affect site location, construction, use and expansion.
- Before finalizing your site plans, investigate the building codes for your area; these often require that your drawings be approved by a locally licensed architect and/or city engineer.
- Existing customer facilities and/or operations may be disturbed temporarily by the installation of Honeywell computer and data communication equipment.
- Electromagnetic interference (EMI) sources in the proximity of the computer system may have an adverse effect on the computer system's operation.

- Communications facilities should provide for future expansion of data communication equipment.

After your computer site has been selected, the following factors are worthy of consideration:

- Work flow--For efficient work flow, consideration should be given to related work areas, human factors, storage and noise isolation.
- Service area--Space should be provided near the system for equipment supplies and media storage.
- Security--To protect both data and equipment, security measures are essential. You may want to consider:
  - 1 Physical security--site access, fire and other damage controls, including controlled personnel access.
  - 2 Control and procedures--the audit of personnel, clearly defined areas of responsibility, followed by controlled access to the computer system areas.
  - 3 Recovery and backup procedures--the protection of record storage to help ensure continued operation, duplication and safe storage of priority, sensitive and crucial data.

## SITE LAYOUT

Once your site has been selected, you should proceed with developing the drawings for the site layout. Specific considerations for designing an efficient processing center vary from installation to installation, but five major considerations for space and specifications apply to most installations:

- Do not underestimate growth potential. The trend has always been for additional computer applications; this means additional equipment and, in turn, additional space.
- Make sure that the equipment is situated for the best operating efficiency and comfort.
- Deviations from the recommended environmental specifications or requirements included in this manual may cause serious problems in the operation and maintenance of the equipment.
- Power isolation and regulation are necessities, particularly since growth in the amount of power may be required. To prevent loss of processing capability during voltage reductions or brownout, adequate voltage regulation may be required.

- Space in the computer room must be allotted for the Diagnostic Processor Unit (DPU) and for at least one site spares storage/maintenance cabinet for Honeywell Customer Services. Also, space may be needed for a board tester if there is no maintenance room.

After evaluating the possible sites you should prepare equipment layouts for each area under consideration. A Site Planning Template Kit (Order No. FZ97) is available for you to order, or you may use the scaled templates and the site layout aids in Section 8 for this purpose. Figures 2-1 and 2-2 are sample typical site layouts. Your Honeywell representative is available to assist you in developing your site layout.

You may order the Site Planning Template Kit from:

Honeywell Information Systems Inc.  
47 Harvard Street  
Westwood, MA 02090

Attn: Manager, Computer Supplies MA06-01

The following details should be shown on the site layout drawing:

- Size and shape of the computer room.
- Entries and exits. (Doors should open outward.)
- Adjacent corridors size, elevators, ramps and staircases.
- Building columns, internal and external windows.
- Any under-floor or above-floor obstructions that affect the installation or routing of interconnecting cables.

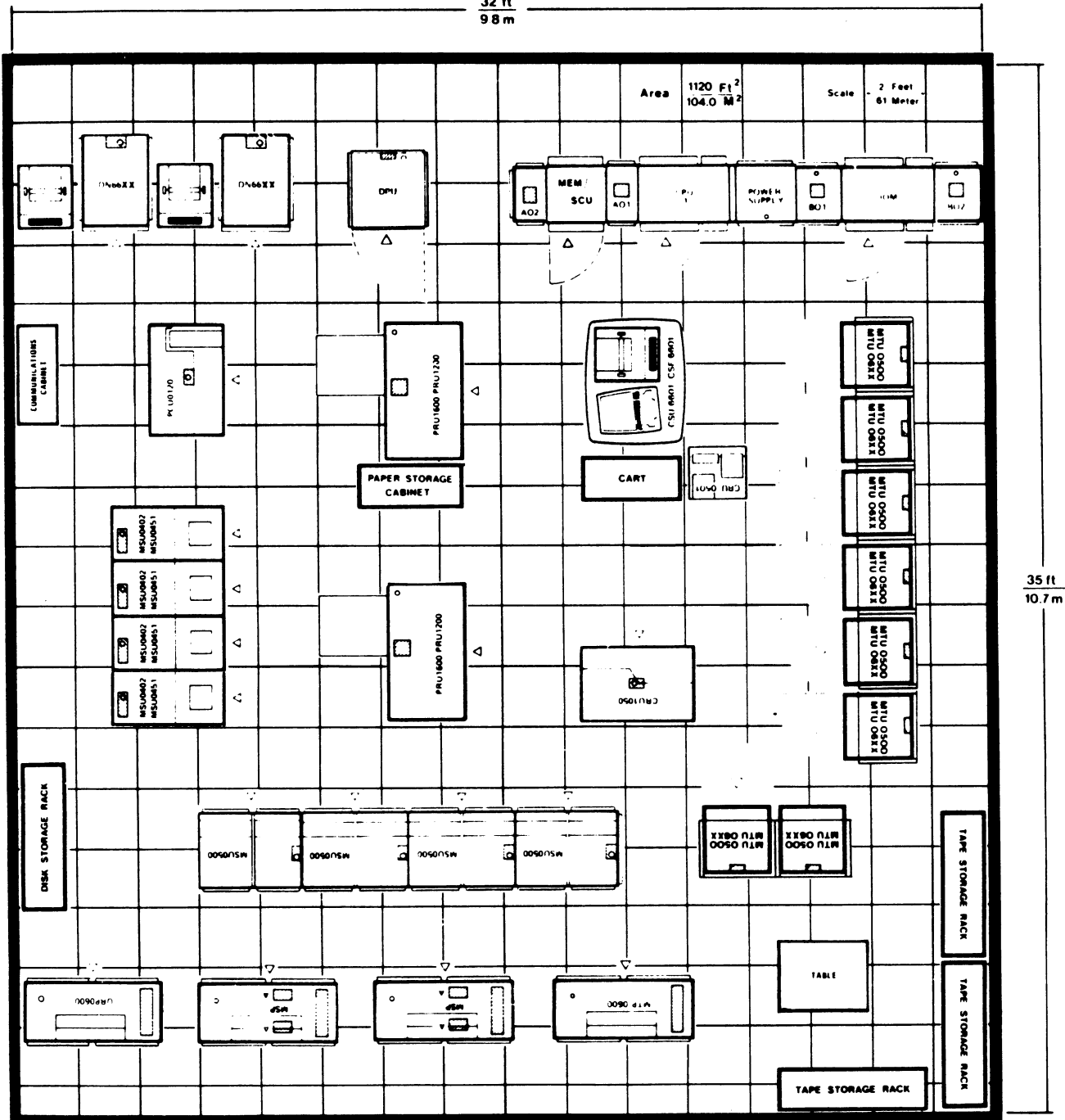
**CAUTION**

DO NOT EXCEED THE MAXIMUM PERMISSIBLE CABLE LENGTHS IN DESIGNING THE SYSTEM LAYOUT. AN ALLOWANCE MUST BE MADE FOR A STUBOUT LENGTH FOR EACH END OF THE CABLE.

- Location of the central system(s) and all peripherals.
- Location of the motor generator control unit(s) or uninterruptible power system control unit in the computer room.
- Location of the motor generator or uninterruptible power system, if used.
- Emergency power off switches.
- Ac load centers.

- The ac ground point and the system ground point.
- Site storage and maintenance cabinet locations.
- Media storage area.
- Related work tables and an area for carts.
- Communication terminals and communication data sets and data modems.

32 ft  
9.8 m



- Legend**
- △ Front
  - Logic Cable Entrance
  - ⋯ A C Power Cable Entrance

- Space Included For :**
- Operator/Maintenance Access
  - Input/Output Media Storage

Typical System Layout: DPS 8152

FIGURE 2-1

## **SITE PREPARATION SCHEDULING**

### **Pre-Installation Schedule**

After you have selected the equipment complement that suits your requirements, establish a schedule incorporating all phases of pre-installation and system installation work. Although it should be understood that scheduling concerns and time frames may vary depending upon particular circumstances, a typical pre-installation schedule for a Honeywell computer system follows.

#### **NINETY DAYS BEFORE DELIVERY**

You and the Honeywell representative should establish a preliminary drawing that shows the intended arrangement of the equipment at the selected site. The site layout should be approved by you, Honeywell Customer Services and the Honeywell Marketing Representative before starting site construction.

After site layout approval, the following steps are typical:

- Verify site dimensions and building access dimensions.
- Review and order any necessary accessories to support your operation. Your order for data modems, data sets and telephones should be placed as early as possible to ensure all telephone communication equipment is installed before equipment delivery.
- Ensure that the proposed floor loading meets the building specifications and applicable city codes and ordinances.
- Determine the location and type of the primary power source (in-plant diesel generator, public utility, etc.) and the length of power runs.
- Determine the electrical power source capacity and quality vs. the system needs.
- Arrange for the installation of any necessary additional electrical power.
- Determine the voltage fluctuations at the power service entrance over a one week period. (A power analyzer should be used for this purpose.) If the voltage fluctuations are greater than the equipment specifications, voltage regulation is required.
- Determine if additional air conditioning is necessary and arrange for its installation.

#### **SIXTY DAYS BEFORE DELIVERY**

Honeywell Customer Services should be provided with approved copies of the site layout drawings and specifications, including accesses, docks, door sizes, elevator sizes, etc.

#### **SITE PLANNING**

**DL63-01**

- Order power panel(s) and raised flooring.
- Establish a plan to vacate the selected site if it is presently occupied.
- Arrange for insurance you may need for your computer site.
- If you wish to purchase supplies from Honeywell, you should place your order at least 30 days before equipment delivery. Request a copy of the Honeywell Computer Supplies Catalog, order number BY62, from your Honeywell representative, or you may write to:

Honeywell Information Systems Inc.  
47 Harvard Street  
Westwood, MA 02090

Attn: Manager, Computer Supplies MA06-01

#### THIRTY DAYS BEFORE DELIVERY

- Install primary power equipment, motor generator(s), MG control unit(s), uninterruptible power supply system, etc.
- Install ac power.
- Install ground braid and ground wiring.
- Install earth ground.
- Install lighting fixtures.
- Install air conditioning.
- Install fire and smoke detection system.
- Install fire extinguishing system.
- Install raised flooring.
- Verify that all accessory equipment, such as data modems, data sets, remote terminals, teleprinters and communication lines function properly.
- Complete the support facilities (such as media storage and Customer Services maintenance area).
- Ensure that a data modem (Honeywell DCD2124 or equivalent) and telephone are available for the Distributed Maintenance Service (DMS). The DMS Data Modem Options information is included in Section 6 of this manual.

## SEVEN DAYS BEFORE DELIVERY

All electrical and structural elements of the site should have been installed and checked out, including air conditioning, fire and smoke detection system, fire extinguishing system and the raised flooring.

## ASSURANCE REVIEWS

### User Responsibility

It is your responsibility to prepare the facility from start to finish so that the equipment can be installed, operated and maintained as outlined in this manual. Refer to the following two lists. The first includes the overall readiness of the computer site and building facilities prior to the ship date. The second list involves the computer area, building access, rigging and carrier packing arrangements prior to the delivery date.

### IMPORTANT

THE CUSTOMER SHALL INSTALL, AT NO EXPENSE TO HONEYWELL, AND SHALL BE SOLELY RESPONSIBLE FOR, ALL INTERNAL BUILDING WIRING INCLUDING POWER AND SPECIAL SIGNAL CABLES (NOT RESTRICTED TO THE COMPUTER ROOM IN WHICH THE EQUIPMENT IS INSTALLED), IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES, REGULATIONS AND REQUIREMENTS.

## STATUS BEFORE SHIP DATE

### CONSTRUCTION (if applicable)

- New dry wall installed, painted, etc.
- Doors and windows installed.
- Lighting installed.

### ELECTRICAL

- Electrical power equipment and wiring installed according to specifications.
- Convenience outlets working.
- Transformers and voltage regulators wired correctly.
- Communication and interconnecting cables<sup><1></sup> installed; e.g., data modems, data sets, teleprinters, remote terminals and telephones.
- Power receptacles or connectors available and installed.

---

<1> Contact your local telephone communications representative.



## AIR CONDITIONING

- Ensure that the cooling capacity and humidity control of the system is adequate to meet the design environmental specifications.
- Ducts and air filters clean.

## GENERAL FACILITIES

- Fire protection facilities installed.
- Data storage area complete.
- Elevators reserved and checked for carrying capacity.
- Equipment delivery access route through the building established and checked for clearance dimensions.
- Rigging arrangements and street availability checked for permits.

## STATUS BEFORE DELIVERY DATE

### CONSTRUCTION

- Card, tape, printer paper and disk media storage facilities completed.
- Raised floor cutouts cut and floor panels reinstalled.
- All computer areas clean and free from dust.

### ELECTRICAL

- Power panel wired, correct size breakers installed and checked out for each device.
- Conduit (when used) installed.
- All wires pulled through conduit from power panel to the appropriate junction box. Proper device and power connectors or receptacles installed.
- Ensure that proper grounding techniques for the system are used. DO NOT USE THE CONDUIT AS A GROUND CONNECTION!
- Data modems and data sets installed and wired properly.<1>

## AIR CONDITIONING

- Cooling and air circulation checked out.

---

<1> Contact your local telephone communications representative.

- Humidity and temperature controls checked out.
- Air vents and registers installed and checked out.

#### GENERAL FACILITIES

- Elevators reserved and marked accordingly.
- All access routes checked for clearance and accessibility. All obstructions should be clearly marked.
- Carrier parking permit secured.
- Carrier and rigging company schedule checked.
- The carpets and/or raised floor should be protected during the moving in or out of the equipment (5/8 in. plywood should be adequate). This is usually the carrier's responsibility.

#### IMPORTANT

DURING THE FACILITY PLANNING PHASE, A HONEYWELL REPRESENTATIVE IS AVAILABLE TO REVIEW THE SITE PREPARATION PLANS THAT HAVE BEEN MADE BY YOUR FACILITIES PERSONNEL OR CONTRACTOR. YOUR HONEYWELL REPRESENTATIVE CAN EVALUATE THESE PLANS TO HELP ENSURE THEIR CONFORMANCE WITH THE REQUIREMENTS OF THE COMPUTER SYSTEM YOU HAVE SELECTED.

DURING THE COURSE OF SITE PLANNING, SITE PREPARATION AND SYSTEM INSTALLATION, HONEYWELL IS AVAILABLE TO CONDUCT PERIODIC PROGRESS REVIEWS WITH YOUR FACILITIES PERSONNEL OR CONTRACTOR TO HELP ENSURE THAT PLANNING AND PREPARATIONS ARE PROCEEDING AS REQUIRED AND IN A MANNER CONSISTENT WITH A SMOOTH, EFFICIENT INSTALLATION.

A REVIEW BY HONEYWELL WILL ORDINARILY BE MADE SHORTLY BEFORE SHIPMENT OF THE SYSTEM TO HELP ENSURE THAT ALL IS IN READINESS FOR AN EFFICIENT AND COMPLETE INSTALLATION. EXPERIENCE HAS SHOWN THAT IT IS TO YOUR ADVANTAGE TO HAVE ALL SITE PREPARATIONS COMPLETED BEFORE RECEIVING YOUR SYSTEM. THE HONEYWELL REPRESENTATIVE CAN, WITH THE HELP OF YOUR FACILITIES PERSONNEL OR CONTRACTOR, EXAMINE YOUR PREPARATIONS. IF WORK IS NOT COMPLETE, HE OR SHE WILL WORK WITH YOUR REPRESENTATIVE TO ARRIVE AT A NEW SCHEDULE FOR COMPLETION AND SHIPMENT OF YOUR SYSTEM.

HOWEVER, THE FAILURE OF HONEYWELL TO DETECT OR NOTIFY YOU OF ANY NON-CONFORMANCE TO SITE PREPARATION OR LAYOUT PLANS OR TO SITE SPECIFICATIONS OR REQUIREMENTS OR RECOMMENDATIONS DOES NOT RELIEVE YOU OF ANY CONTRACTUAL OR OTHER RESPONSIBILITY THAT YOU MAY HAVE WITH RESPECT TO SITE PREPARATION AND SYSTEM INSTALLATION NOR SHALL HONEYWELL BE LIABLE FOR FAILURE TO DETECT OR NOTIFY YOU OF SUCH NON-CONFORMANCE.



EQUIPMENT COMPUTER ROOM

**IMPORTANT**

THE FOLLOWING RECOMMENDATIONS AND REQUIREMENTS ARE SUBJECT TO APPLICABLE LOCAL CODES, REGULATIONS AND ORDINANCES, WHICH, IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY WILL CONTROL AND PREVAIL OVER THE FOLLOWING RECOMMENDATIONS.

Floor Requirements

The system is designed for under-floor access of logic and power cables. The customer should provide a raised floor or its equivalent. The raised floor must meet the following requirements:

1. Minimum space between subfloor and raised floor of 8 inches (20cm).
2. Honeywell recommends a ramp rise of 10 degrees, however, it must not exceed 20 degrees.

**WARNING**

UNITS MARKED "TRANSPORTATION TIP HAZARD" REQUIRE SPECIAL HANDLING ON STEEP RAMPS TO ENSURE THE SAFETY OF PERSONNEL AND EQUIPMENT

3. Level within 1/4 inch (.6cm) within 10 ft (3m).
4. Floor loading capacity shall be capable of sustaining:
  - Leveling pad - 500 lbs/sq in. (35kg/sq cm) maximum.
  - Caster - The casters on some equipment may impose a higher point loading on the floor than the floor design specifies, therefore it is recommended that the raised floor be protected (such as using plywood) while moving heavy equipment into place.
  - Maximum load of any single unit - 200 lbs/sq ft (1000 kg/sq m) (weight of the unit divided by the area actually occupied by the unit).
  - The distributed floor load for the entire system may be calculated by adding the weights of all units to be installed, including auxiliary equipment and dividing by the total area of the computer room.

### IMPORTANT

THE METAL FRAME SUPPORTING THE FALSE FLOOR MUST HAVE A SOLID BUILDING GROUND AS SPECIFIED UNDER GROUNDING SYSTEM IN SECTION 4.

If power receptacles, located under a raised floor, are exposed to water, waterproof connectors must be used. Proper drainage must be used in order to guard against flooding or trapping water under the false floor in the computer room. This is especially important in buildings where the regular floor is depressed and the raised surface is level with the adjacent areas.

If carpeting is used, it must be of a type specifically manufactured for computer room application and be rated at 2.0kV or less as measured per AATCC specification #134.<1>

### CABLE ACCESS CUTOUT HOLES

#### WARNING

CARE MUST BE TAKEN DURING THE PERIOD BETWEEN CUTTING FLOOR HOLES AND INSTALLATION OF THE EQUIPMENT TO ENSURE THAT THE HOLES ARE TEMPORARILY COVERED TO PREVENT ACCIDENTAL INJURY TO PERSONNEL.

A scaled drawing of each cabinet base is included in Section 8 and can be used to locate cutout holes for system cable access and ac power cables. Using these layout drawings as a guide, the computer room floor access holes can be cut prior to delivery of the system. Cutout hole edges must be prepared in a way that will prevent cable damage. Floor panel manufacturers can provide vinyl molding strips for lining the cutout holes.

The scaled drawings can be provided by your Honeywell representative.

After system installation on sites with under-floor air conditioning, the ac power and logic cable access holes must be blocked off in an appropriate manner with UL approved nonflammable material to prevent uncontrolled air flow. This is essential to balance air flow effectively and to prevent air at too low a temperature from entering the units.

### FLOOR COVERING

Many considerations besides appearance and cost determine the best floor covering material for a computer installation. For example, materials that produce or trap lint and dust or require

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<1> American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709

much water to clean pose a direct hazard to the equipment installed in the area. Certain materials are more prone to generation of static electricity and should be avoided. A conductive flooring is recommended. Special conductive flooring materials include terrazo, vinyl tile and carpet.

#### Tile

In the past, the choice of hard surface flooring has usually narrowed to vinyl or linoleum because of their attractiveness, durability, maintainability and sound absorption. Asbestos-filled vinyl can present hazards and its use is no longer recommended. Asphalt tile is not suitable because it chips easily and produces dust that could cause equipment problems.

Honeywell considers high-pressure laminated fiber-resin floor surfacing material to be a superior product for computer installations. The extremely hard surface is highly resistant to scratching, scarring, denting and cigarette burns. Also, it possesses excellent color stability and glare control. These surfaces do not ordinarily require waxing and need only an occasional damp mopping.

#### Carpet

**WARNING**

**UNDER SOME FIRE CODES, CARPETING IS NOT ALLOWED  
IN COMPUTER AREAS.**

Carpeting may be permitted if it will not contribute to the spread of fire, is not readily ignited by sparks or burning embers, and does not restrict lifting the panels for access to the under-floor space. Carpeting offers many advantages over tile. A good grade of carpet can be treated to be lint free and lasts as long as good vinyl tile, but a poor grade of carpet can wear rapidly and produce great amounts of lint that may damage the equipment. Carpeting is attractive and serves as an excellent sound suppressor. It also is more comfortable for operating personnel.

Provisions must be made to prevent a buildup of static electricity, beginning with the selection of the carpet fiber. Pure nylon carpet, for example, is unacceptable because of its static attraction. Be sure to select carpeting with permanent, built-in static protection which limits static buildup to less than 2kV at 20% relative humidity and 70 degrees F (21 degrees C). When the carpet is installed on access floors, its electrical resistance from surface to ground should be no higher than 250 kilohms to help provide both personnel safety and good static performance.

Keeping the humidity within specifications will further minimize static buildup. In existing static producing carpeted areas one of the anti-static spray products can be an effective treatment to minimize static. However, this treatment must be repeated on a regular basis.

## Floor Mats or Runners

Electrically conductive floor mats or runners can be used in areas requiring localized protection against static. Honeywell has determined that electrostatic discharge (ESD) produced by static electricity may upset the logic in your computer, minicomputer, terminal subsystems, processing stations or other related computer equipment.

Carefully locate the floor mats or runners in your computer area so that any static charge can be harmlessly eliminated from personnel who enter the area. The mats should be placed wherever operators are likely to step before actually touching the equipment. For example:

- Around all computer work stations, data entry terminals, minicomputers and processors.
- As a runner at the entrance to the data processing areas (especially if the area is entered from a carpeted floor).
- As a runner in front of a row of peripherals, such as tape handlers and disk drives.
- Around any sensitive peripherals in the data processing area where contact with operating personnel is frequent.

For additional information on static electricity send for the pamphlet, Electrostatic Protection in the Computer Equipment Environment, Order Number VB95.<1>

## Maintenance

### CAUTION

**NEVER ALLOW STEEL WOOL POLISHING PADS TO BE USED IN THE COMPUTER ROOM.**

Place tack rugs at all entrances to catch dust, grit and abrasives brought in from other areas. Daily removal of loose traffic dust can help minimize the risk of damage to the computer equipment.

Water must not be used freely for cleaning because of the possible electrical shock hazard involved. On raised floor, water can seep between the floor panels and damage the cables below. For tile floors, a well-wrung mop or a vacuum cleaner may be used, but the preferred method is to use clean dust absorbing cloths which are often available on a rent-exchange basis. The method removes dust without stirring it up. On carpet, use a tightly sealed vacuum cleaner with a good filter.

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<1> Honeywell Information Systems Inc., 47 Harvard Street,  
Westwood, MA 02090, Attn: Manager, Computer Supplies MA06-01

With raised floors, be sure that lint from scrub brushes and airborne particles or corrosive cleaning agents do not seep between the panels where they can be drawn into the equipment by the internal circulation fans. Periodic cleaning of the subfloor area is recommended to prevent dust and debris from accumulating.

### Walls

Perimeter walls must be installed between the subfloor and the permanent ceiling. Partitions within the computer area complex should be installed between the raised floor and the ceiling. Partitions lower than ceiling height should be avoided to minimize dust and noise in the area. If partitions are installed between adjacent raised floor areas, they should clear the subfloor by at least 5.5 inches (14cm) along their base, except at post locations, or they should rest on the raised floor. This allows clearance for interconnecting cables and for power conduits.

Consider the use of movable steel partitions which are usually 80% reusable and can be provided with a one hour fire rating, a broad range of prefinished colors and surface materials and with effective acoustical treatment.

All computer room doors should open outward and be fire resistant. The outer walls should be fireproof.

### Ceilings

The ceiling must be 8 ft 6 in. (2.6m) measured from the top of the raised floor.

Any commercial grade of fire resistant ceiling tile is usually adequate. Your architect or consultant can recommend ceiling materials which require minimal maintenance and may help reduce the cost of heating, lighting and air conditioning.

Acoustic treatment of the ceiling is advisable. Sprayed on acoustical ceilings and mineral based fissured, dropped ceiling tiles should be avoided because they flake. Dropped or suspended ceilings generally have the best combination of noise absorption characteristics, appearance and low maintenance. A perforated metal pan ceiling with a sound absorption backing pad or matted fiberglass is desirable.

### FINISHES

The finish of the walls and ceilings should be free from flakes, chips and chalking materials. Do not install glass-fiber tiles that might produce abrasive particles or floor coverings that crack or crumble. Avoid using any paint that powders or flakes.

### SOUNDPROOFING

A computer area has a higher noise level than a clerical office containing light office equipment. To keep the noise in the computer area and nearby areas to an acceptable level, pay particular



attention to the use of sound absorbing materials and to the arrangement of barriers that will deflect sound. To isolate the area acoustically, the perimeter walls should be heavy and as free from cracks and openings as possible. Open doors, for example, destroy acoustic isolation.

Partitioning is usually sufficient to reduce the sound level in adjacent offices to an acceptable range of 50 to 55 decibels. Quiet study or conference rooms should not be located near the computer equipment.

It is normal practice to provide an acoustical ceiling suspended below the structural ceiling. See the information under CEILINGS in this section of the manual for the details.

In some installations, acoustic treatment of the walls may be also required. Take care that the materials chosen are durable. Heavy curtains (over walls or windows) are acoustically effective but require removal for cleaning. For window areas where light is desired, tilted venetian blinds may substitute for closed curtains. The vanes of the blinds reduce the direct reflection of sound.

Untreated surfaces that are broken by columns, decoration or irregular room shapes disperse sound better than perfectly flat surfaces.

Structure borne vibration that causes noise in areas adjacent to or below the computer area is usually negligible unless the floor is in very poor condition. Raised floors should have extra support jacks at strategic places to prevent transmission of vibration along the surface.

In some installations, where the air conditioning fan is close to the computer area, some special treatment may be required to reduce its contribution to the area noise level.

Your architect or consultant can suggest some of the more popular soundproofing materials for your consideration. Check with your contractor about the reactive noise reduction coefficients of available materials. Materials are preferred which have significant absorption properties at the lower frequencies (125-250Hz bands) as well as at the higher frequencies.

When special problems exist and the installation of acoustic material requires special techniques, consult a specialist.

### Lighting

An intensity of approximately 861-1076 lux (80-100 foot-candles) at desk level is ordinarily adequate for the computer area. Fluorescent lighting is preferred because it generates little heat and illuminates the work area evenly. Personnel operate switches, read indicators, read video displays, etc., therefore, the room must be free of glare. This should be considered in the design and position of the lighting fixtures.

Flush or recessed fixtures are suggested since they are attractive and are less likely to collect dust than hanging fixtures.

Direct sunlight should be avoided because a lower level of illumination is needed to observe the indicator lights on the equipment. Also, light sensitive sensors are used in certain Honeywell computer equipment and the sunlight can cause false reactions. Windows which receive sunlight should be fitted with venetian blinds, glazed with tinted glass or treated with other material to protect against sunlight.

Even when not required by code for certain areas, some type of emergency lighting should be provided. Emergency lighting can be of the ordinary battery operated type, that turns on automatically when power to the main lighting system is interrupted. These units are wired to and controlled by the lighting circuit and are activated by a relay or a light sensor.

### Fire Protection

Permanent fire protection equipment should be installed during the construction phase of your site preparation. Information is given in Section 7 concerning fire detection and fire extinguishing equipment.

### Equipment Colors

Customer selected Standard or Optional accent color is applied within the system to specific units preselected by Honeywell to enhance the appearance of the operating environment. Optional colors are available on a RPQ (Request Price Quote) additional cost basis.

Color chips are available for use by the customer or subcontractors for color matching computer room accessory equipment and decor. They maybe ordered from:

Honeywell Information Systems Inc.  
Finish Control Center  
200 Smith Street  
Waltham, MA 02154

(Telephone 617\*895-6098)

Order by color name and chip number as given below:

TABLE 3-1. SYSTEM COLORS AND CHIP NUMBERS

System Color		Chip Number
STANDARD Color Scheme Accent P-1	Gothic Black	58000100-003
	Glacier White	58000100-002
	Caribbean Blue	58000100-001

**TABLE 3-1 (CONT). SYSTEM COLORS AND CHIP NUMBERS**

System Color		Chip Number
STANDARD Color Scheme Accent P-2	Gothic Black	58000100-003
	Glacier White	58000100-002
	Hunter Red	58000100-004
OPTIONAL Color Scheme Accent P-3	Gothic Black	58000100-003
	Glacier White	58000100-002
	Aztec Yellow	58000100-005
OPTIONAL Color Scheme Accent P-4	Gothic Black	58000100-003
	Glacier White	58000100-002
	Maritime Green	58000100-006

**MEDIA STORAGE AREA**

Media must be stored conveniently and under proper environmental conditions. Depending on the size of your computer installation, space must be allotted for the storage of tab cards, printer paper, magnetic tapes, disk packs, printer ribbons and other supplies. Savings in operator time over the life of the system can justify dedication of sufficient storage space convenient to the point of use.

Consider fireproof storage for critical magnetic tapes and disk packs. The amount of space to be allotted for disk pack storage depends upon the total number of disk packs required by the system and the possible division of these disk packs into two or more storage areas. Users normally desire a disk storage area within the processing center for the current disk packs. You may want to duplicate current disk packs as a safety factor in case of fire or loss of information through operator or machine errors. If duplicate disk packs are used, provide a second disk pack storage facility in a remote area.

The disk packs can be stored in any of several size cabinets (housing 8 to 12 disk packs per cabinet). The recommended storage positions for disk packs is flat in a horizontal position.

All media storage areas must be temperature and humidity controlled within the same limits as for the computer system.

**MOTOR GENERATOR ROOM**

If you have or are planning for a motor generator for your site, it is recommended that it be located in an adjacent room. There should be approximately 3 ft (.9m) clearance on all sides of the MG. (Refer to the Installation Outline Drawings for the MG's in Section 8.) The room must have clean ventilating air within the

limits of zero degrees F (-18 degrees C) to 104 degrees F (40 degrees C) and relative humidity of 5% to 95%, with sufficient air circulation to dissipate the heat.

### **MAINTENANCE AREA**

A maintenance area must be provided for the Customer Services representative to work and for the storage of Honeywell spare parts and maintenance equipment. It should be an enclosed area capable of being secured from unauthorized access and should be adjacent to the computer room at the same floor level. If necessary a ramp suitable for movement of test equipment must be provided. For a single processor system, the area must be at least 200 sq ft (18.6 sq m), or for a dual system, the area must be 250 sq ft (23.2 sq m).

In addition to the maintenance room, approximately 25 sq ft (2.25 sq m) of space must be allowed near the system central processor for the diagnostic processor unit (DPU). (Refer to the Installation Outline Drawings in Section 8 for the details of the unit.)

The following facilities should be provided in the maintenance area to facilitate efficient maintenance of your system:

- A workbench with a wooden top.
- A standard office desk.
- A four drawer filing cabinet.
- A desk chair and a steel posture stool.
- Two duplex convenience outlets, (120V, 20A).
- A telephone
- Standard office level lighting.

### **RELATED WORK AREA**

You should allot space in your site layout for carts, tables and storage racks for use by your operators and programmers. It is recommended that decollating equipment and tab punch operations be located in a different room from your computer, as should any pickup/drop off area for the computer jobs, printouts, etc.



**SECTION 4**  
**SITE POWER REQUIREMENTS**

**AC REQUIREMENTS**

You must furnish and install utility power for the computer site in accordance with the system power schematic, Figure 4-1. It is also your responsibility to furnish and install the electrical equipment for the installation, including fittings, distribution panel, the raised floor cutouts, transformer(s) and voltage regulator(s) or motor generator. Future site expansion should always be considered. Provision for extra power facilities can save added installation costs later.

Problems associated with computer operations can originate in the utility ac power system. Disturbances such as electrical noise, power interruptions and lightning must be factored into the plans for the power systems since power fluctuations or interruptions can substantially affect computer system performance. Close coordination with the electrical utility representative can help correct potential problems originating in the utility system supplying power to the building. Many of the services and disturbances that can seriously affect an operation are generated within the building itself. Your plant engineer and the electrical utility engineer must identify these disturbances and take steps to prevent possible adverse effects on the operation of the computer system.

The power source for the computer system should be completely isolated from the other power systems in the facility. This will help reduce the electrical interference caused by motors, fluorescent lights and on/off electrical loads found on most utility systems.

This isolation can be provided by a motor generator or uninterruptible power supply. Under most circumstances the motor generator along with the Battery Power option will provide adequate power to last through short interruptions in the power source. However, if any power loss is critical to your operation, you should consider the installation of an uninterruptible power supply. Be sure to include extra capacity in the power source you choose to allow for future expansion of your site.

Similar isolation for the peripheral equipment can be provided by a separate isolation transformer.

<p><b>Note: OTHER BUILDING LOADS SHOULD NOT TO BE SUPPLIED FROM YOUR COMPUTER SYSTEM POWER SOURCE.</b></p>
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## AC Power Specification

The electrical power supplied to the information processing system must meet the following requirements:

1. 60Hz nominal for the central system. Allowable frequency variation plus or minus 0.5Hz maximum.
2. If the system is installed where 50Hz power is distributed, then a frequency converter(s) must be utilized to supply the required 60Hz line frequency.
3. 208Y/120 five-wire, four-wire wye plus ground, for the central system and the peripheral equipment with the limits of + or - 10%.
4. A total harmonic content of 6% or less of the fundamental frequency.
5. Three phase with a maximum phase variation of 6 degrees or less from the nominal 120 degrees relationship.

If your system availability criterion necessitates an uninterruptible power system, your Honeywell representative can assist in obtaining interface requirements. Refer to the Motor Generator Specifications description later in this section for possible elimination of redundant protection features.

## **MOTOR GENERATOR SPECIFICATIONS**

The motor generator (MG) set should normally be shipped to your site one month prior to the arrival of your system. The MG should be installed, wired and tested by your electrician or contractor before the installation of the system.

The motor generator set must be selected in accordance with the utility power provided at the site and with the system load, taking into account line losses and future expansion. Refer to the Installation Outline Drawings in Section 8. In some cases, it may be necessary to change the motor wiring to match the utility voltage available at the site. Instructions for doing this will usually be found on the motor frame and/or in the instruction manual shipped with the MG set. The MG usually comes factory wired for 440-480 volts, but may be reconnected on site to accommodate 208-240V.

Line losses must be considered if the load approaches the rating of the generator and the generator is remotely located.

A properly designed uninterruptible power system (UPS) may eliminate the need for the motor generator and the isolation transformer. Honeywell Engineering can evaluate UPS design for this aspect upon submission of complete specification of the UPS and its loads, via request for price quote (RPQ).

## AC POWER REQUIREMENTS BY UNIT

Section 8 of this manual includes an installation outline drawing for each unit in your system. These include typical values for:

- Amps per phase
- kVA
- kW

These values are for general information only to estimate the power load. They may differ slightly in each unit due to manufacturing tolerances. They have not been derated for duty cycle. Size and duration of the starting current is shown where it is significant. To meet NFPA 70<1> electrical code, the primary distribution has been sized by nameplate rating and the typical current as shown in Section 8.

The values shown for circuit breakers and wire size meets current NFPA 70 code. Follow your local code if larger sizes are required. The quantity of wires shown includes the required green/yellow or green wire (safety ground conductor).

## AC POWER DISTRIBUTION

Figure 4-1 shows a typical power system diagram. It is the customer's responsibility to supply, install and maintain the following materials. (See Section 8 for required circuit breaker capacities.)

- The disconnect switch or circuit breaker for the input to the transformer or motor generator set (Reference A, on Figure 4-1).
- The distribution panel and circuit breakers for the central system (Reference B). The rating of the main breaker is determined by the total load.
- The distribution panel and circuit breakers for peripheral equipment (Reference C).
- The main circuit breakers with a 24Vdc undervoltage release coil for the distribution panels. The rating of the circuit breaker is determined by the total load (Reference D).
- A 15A single pole circuit breaker for MG control unit (Reference E) if an MG is utilized. The MG control unit is connected to both the motor generator output and the utility power as indicated.

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<1> National Fire Protection Association, Batterymarch Park, Quincy, MA 02269



- The wiring and conduit from the distribution panels to each central system unit and each peripheral unit, including connecting the input power to the disconnect switches on each unit. Order and install sufficient wire for a 2 ft (0.6m) stubout length for each unit.
- The safety ground from the circuit breaker load center and each unit in the computer system to ground. This is the fifth wire indicated in Sections 2 and 8 and it must be green/yellow or green.
- The control wiring from the MG control unit to the MG, distribution panels and emergency-off switches. See Emergency Power-Off Wiring in this section.
- The ducts and/or cable trays for interconnecting logic cables if required by the electrical code or site layout.
- Any transformer(s) that may be required to provide an isolated power circuit for the system independent of other building power.
- The mounting for the distribution panels, isolating them from each other and from any contact with the building ground.

Notes:

1. Aluminum wire is not acceptable for this application.
2. Certain peripherals are equipped with AC power cords (see Section 8).
3. The 15A circuit breaker must be connected to the utility as shown in Figure 4-1 (Reference E) to permit the air conditioner to start up automatically after a power line outage. When power is lost, the main circuit breaker in the peripheral load center must be manually reset to restore power to the devices it supplies. If the MG control unit took power from the peripheral distribution panel, the air conditioning is not restored until the main breakers are reset.
4. All runs in metal conduit must be isolated for their entire length from building ground. Insulated conduit material may be required to meet this specification. Plastic bushings are required to electrically isolate conduit from the computer units (see Figure 8-2 in Section 8).

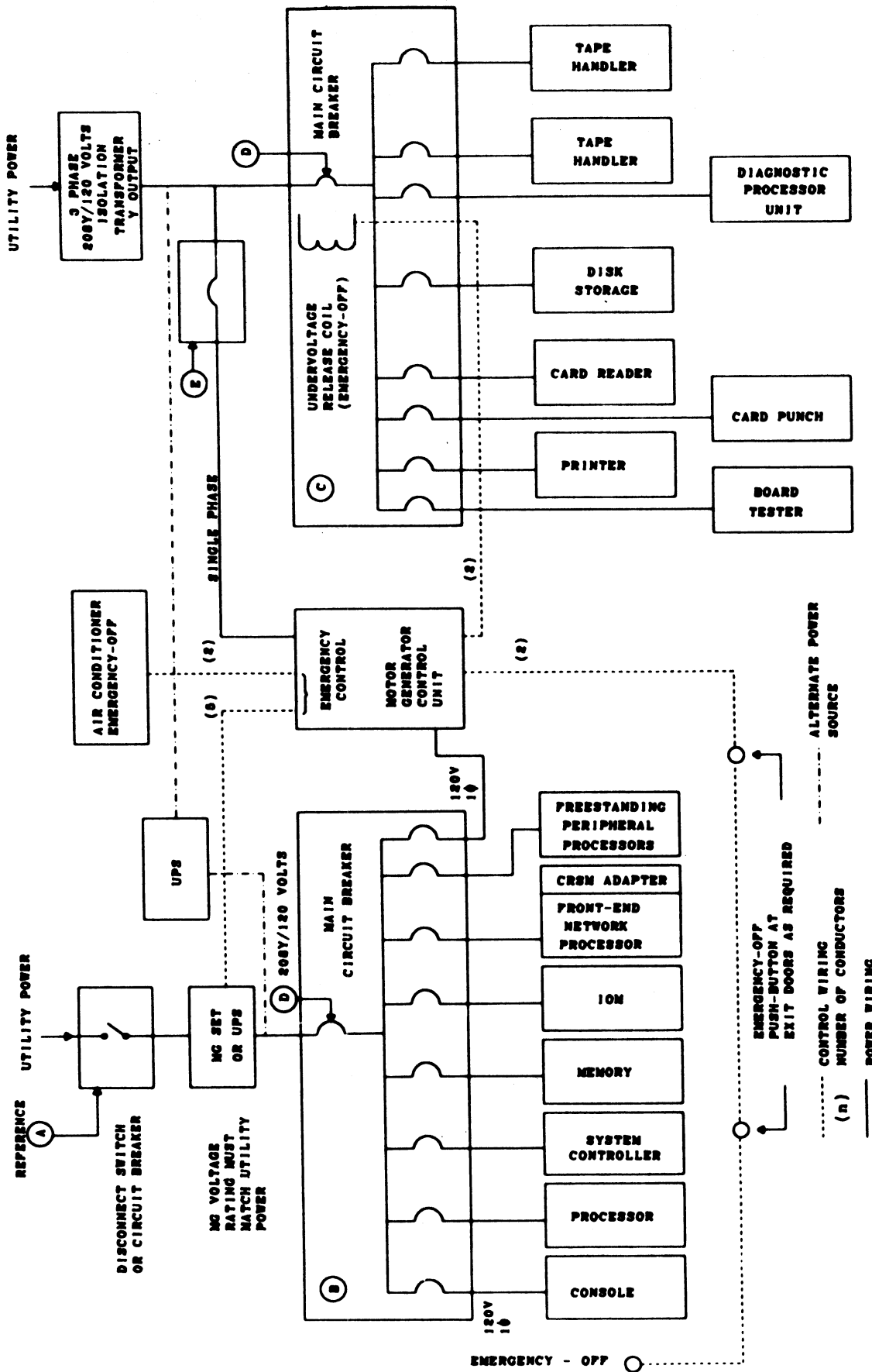


FIGURE 4-1. POWER SYSTEM DIAGRAM

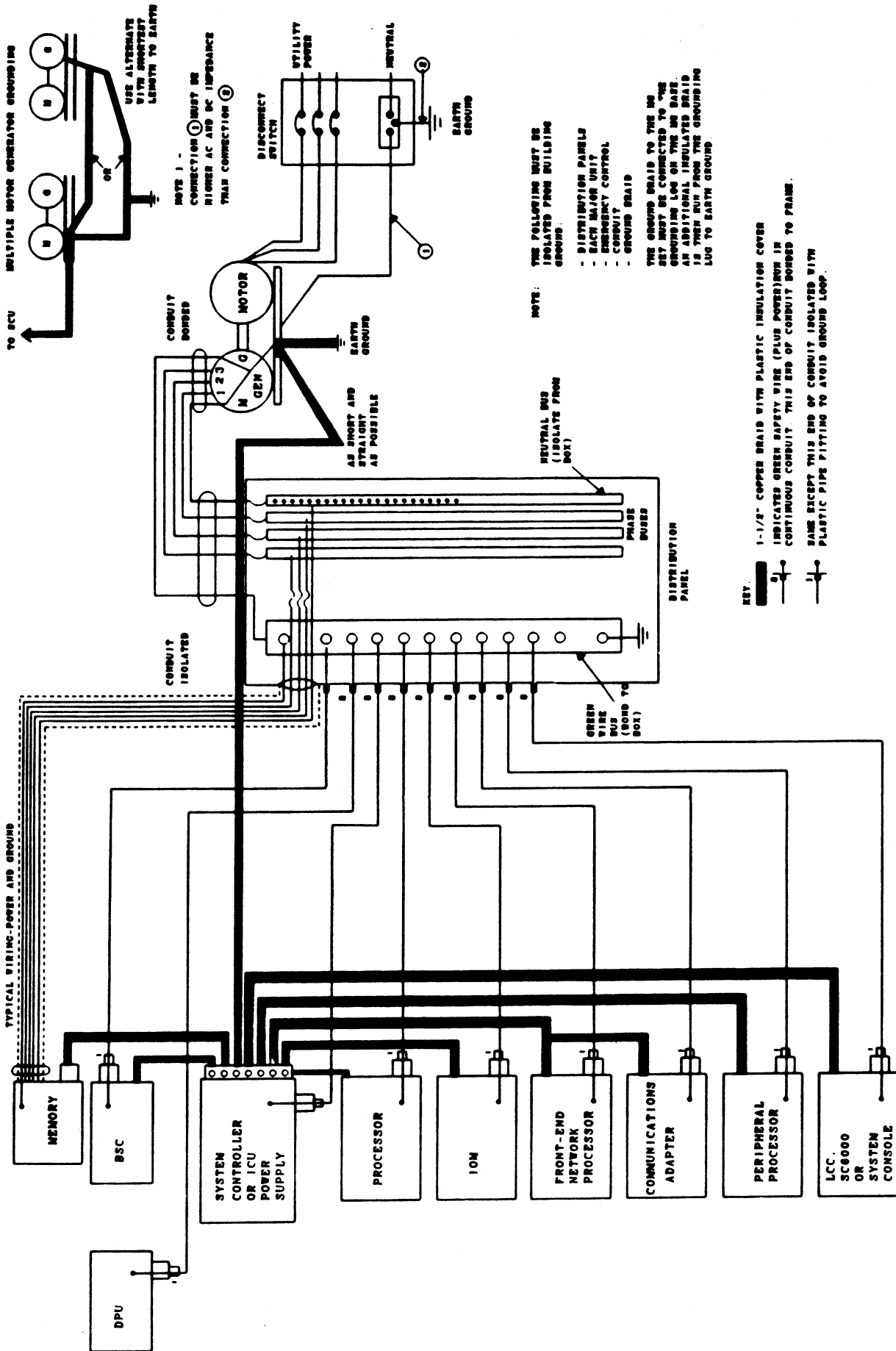


FIGURE 4-2. GROUND SYSTEM - CENTRAL SYSTEM

## GROUNDING SYSTEM

Successful operation of a large scale computer system can be dependent upon proper grounding. Refer to Figure 4-2. If proper grounding techniques are overlooked, ignored or misunderstood, system performance may be degraded. This may result in costly troubleshooting and maintenance, with the possibility of the system not being operational when needed.

The most important reasons for grounding electronic equipment are:

1. To provide a low impedance, fault return path to protect the personnel and the equipment in the event of an AC power fault to ground. The objectives are to keep the voltage potential between the equipment and adjacent structures low enough for personnel safety and to cause the power system protective devices to open before the equipment is damaged by a power fault.
2. To provide a low impedance path to earth for lightning current with sufficient shunting effect to keep the potential at the equipment frame within safe limits.
3. To provide a common equipotential plane for the overall computer system installation. The objective here is to keep all of the equipment at the same potential by shorting out equipment potential differences caused by electrical fields of many frequencies.
4. To provide a low impedance path to earth for static electricity which might otherwise build up enough potential to spark, causing electrical noise or system malfunction.

It must be understood that while all ground circuits are eventually connected to earth ground, ground conductors should not be used indiscriminately for the various ground functions. Signal grounds must be isolated from other grounds (conduit, wall breaker panel, raised floor supports, etc.) to help prevent the interaction between signal path and electrical noise voltages.

### Earth Connection

The most important part of any grounding system is the actual connection to earth. The low resistance path from the system ground point to earth ground is dependent upon the adequacy of this connection and the design objective should be to reduce this resistance to as near zero as possible. A maximum of 25 ohms is allowed as measured with a ground megger to meet the National Electrical Code.

Earth grounds are usually of two types:

1. Connections to underground metal water piping systems, metal frame structures of buildings or other metal structures that are in good contact with the earth. In many

large structures, the building or architectural ground is most often used since it is the most readily available point of connection.

2. Connections to ground rods or plates which have been placed in the earth for the specific purpose of providing an adequate ground connection.

When considering water piping as ground, precautions must be taken to ensure that the metal piping does not connect with plastic piping just outside of the building.

A resistance path to earth of less than 25 ohms can be obtained by using multiple ground rod electrodes. In some instances, it may be necessary to use this method to provide an acceptable ground.

Regardless of the type of ground conductor used, many conditions affecting the ground must be considered in attempting to make an adequate ground connection. The effectiveness of the ground electrode is determined by:

- The characteristics of the electrode.
- The resistivity of the soil around the electrode.

Some of these factors are subject to change over a period of time. This must be considered in evaluating the effectiveness of the ground connection (for example, the soil condition will likely change with the seasons).

Underground piping used for grounding must have the following characteristics:

- At least 10 ft (3m) of metallic length underground.
- Continuous and not corroded.
- It must not be coated or wrapped with insulating material.
- Deep burial to reduce the effects of seasonal soil changes.

Where grounding to water piping systems is not practical or not permitted by local code, rod type electrodes driven into the ground can be used. These are less expensive than other types of grounds such as buried plates or grids, but because they are usually shallow, they may be susceptible to changes in soil resistivity caused by climatic changes.

In most cases, two or more rods in parallel can be used to decrease ground resistance. However, primary consideration must be given to the spacing of the rods. Rods spaced closer than 6 ft (1.8m) will appear as a single rod with almost no reduction in ground resistance over that obtained with a single rod. Because of this characteristic, the ground rods should be spaced at least 20 ft (6.1m) apart.

Ground inspections should be a normal part of your building maintenance routine. Ground connections should be checked on a periodic basis for tightness, damage and corrosion. Inspection should be performed at least every six months under ordinary circumstances, but in the event of unusual weather conditions or events, more frequent inspection is recommended.

#### Safety Ground Wire<1>

1. Every equipment power run must have a separate, continuous insulated wire for use as a (safety) grounding conductor. (This is sometimes referred to as the green wire ground.) It is run inside the conduit or power cord with the current carrying conductors (including the AC neutral). The frame ground (green/yellow) wire must be securely fastened to the frame ground bus (or a terminal provided in the equipment), then to the power distribution panel frame (or ground bus). The distribution panel must then be connected to earth ground as shown in Figure 4-2. This wire must not connect to any grounded current carrying conductor, i.e., AC neutral or power return.
2. The single-point ground system must always be used with all green/yellow wire grounding conductors tied together at the circuit breaker load center. The load center panel should have a copper ground bus to which all equipment grounding conductors can be attached. The grounding conductors for the central system and grounding conductors for the peripherals must not be tied together at the load center panels.
3. The neutral from the MG must be connected to the building service ground. The connection to this neutral must be made to the grounding bolt provided on the frame beneath the generator.
4. In all equipment, the safety grounding (green/yellow wire) conductor is connected directly to the safety ground lug inside the unit's AC junction box. DO NOT connect it to the AC neutral bus or to the system ground lug (braid connection).
5. Conduits are not acceptable as grounding conductors for units in a computer system. For safety reasons all conduit runs should be bonded at the primary power end. All paint, coatings or similar insulating materials must be removed from boxes, panels, etc., before the conduit is attached.

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<1> The safety ground wire may be either green/yellow or green.

## Central System Signal Ground

In spite of the grounding practices described previously, the dc interface between the central system equipment makes ground loops (current loops) inherent in the central system. To help reduce the inductance of these loops, with the high frequencies involved, low impedance conductors of tinned copper braid are used to establish a system ground network. This ground network provides the low impedance connection required to keep the reference ground of all equipment in the central system at a common potential. See Figure 4-2.

Each central system cabinet has a low impedance conductor of one and one-half inch tinned copper braid connected at the cabinet ground bracket. The other end of this conductor is terminated at the memory cabinet ground bracket.

From the memory cabinet an insulated braid is connected to the MG base ground stud. From the transformer or MG, another insulated ground braid is connected to the earth ground. This ground braid material is provided by Honeywell as part of the system installation service. Due to the probability of a remote location of the motor generator set and the required routing of the braid through wall or floor openings, the customer should install the ground braid from the MG to the memory cabinet location. The material will be provided in advance of system delivery.

## Floor Support Grounding

When the raised floor is supported by a metal frame, this entire framework must be maintained as close to building ground as possible. Follow NFPA 70, NFPA 75 and local codes for grounding of the framework.

## **PHASE LOAD BALANCING**

In a three phase, wye connected system with grounded neutral, phase imbalance currents flow in the neutral wire. Attention must be given to balancing loads on the power distribution transformer and on the MG set in order to maintain proper line to neutral voltages.

Values given in Section 8 for amperes per phase are not adequate for phase balancing. Manufacturing and operating variables exceed the required tolerance for good phase balance. Therefore, it is necessary to measure exact current per phase on each unit and calculate an optimum balance by exchanging values. The units should then be reconnected and the total current per phase measured. This must be done separately if the central system and the peripherals are on separate power sources. Keep in mind that some peripheral equipment have phase sensitive motors. This must be taken into account when trying to switch loads to balance the utility power.

## AC CONVENIENCE OUTLETS

All convenience outlets in the computer room must be on a feeder separate from the computer system to help reduce electrical noise interference. Sufficient outlets must be provided so that no unit of the computer system is more than 15 ft (4.6m) from an outlet. Convenience outlet power is 120V, single phase 60Hz, 15A capacity. A three-wire system, including ground, must be used.

## SAFETY EMERGENCY POWER-OFF WIRING

The National Electrical Code NFPA 75 and the electrical code in many cities require that each exit from the room be equipped with a switch that will cycle off all power to the system and to the air conditioning in an emergency situation.

The customer should supply appropriate emergency-off switches for the exit doors<1>. An emergency-off switch is supplied on the system console or system control center. The control wiring for these switches is supplied and installed by the customer. See Figure 4-3.

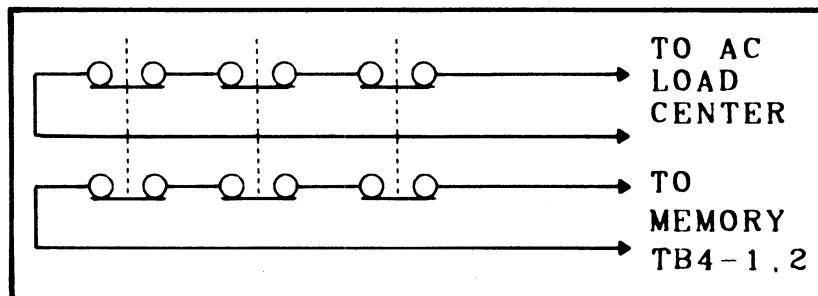


FIGURE 4-3. SINGLE MEMORY UNIT EMERGENCY-OFF

If your memory unit has the battery holdup option these emergency-off switches must have a second set of contacts as shown. If more than one memory cabinet is installed in the computer room the optional shutdown module, WESM001A, is required. This module is in a metal enclosure which may be wall mounted. Knockouts are provided for class 1 wiring. The approximate dimensions are shown in Figure 4-4

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<1> The switch should be activated by a push-to-open pull-to-close mechanism, be UL listed (CSA certified for applications in Canada) and have normally-closed contacts rated at 5A, 125v.



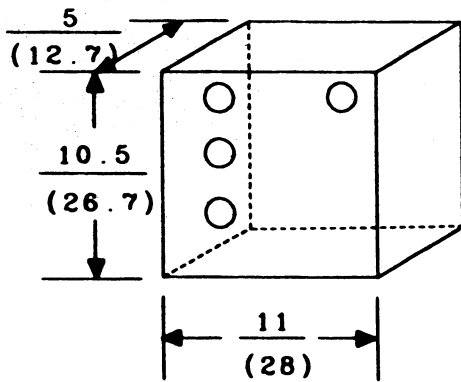


FIGURE 4-4. SHUTDOWN MODULE

Connections from the shutdown module to the memories and the emergency-off switches should be made according to Figure 4-5.

For installations with more than three units containing battery power, additional shutdown modules are required. Connections to the units are shown in Figure 4-5 and connections to the emergency-off switches are shown in Figure 4-6.

Operation of an emergency-off switch at the console or other location causes the emergency control to:

- Trip the main circuit breaker in the AC load center through the 24Vdc undervoltage release coil.
- Turn off the motor generator set, (if used on the system).
- Turn off the air conditioning.

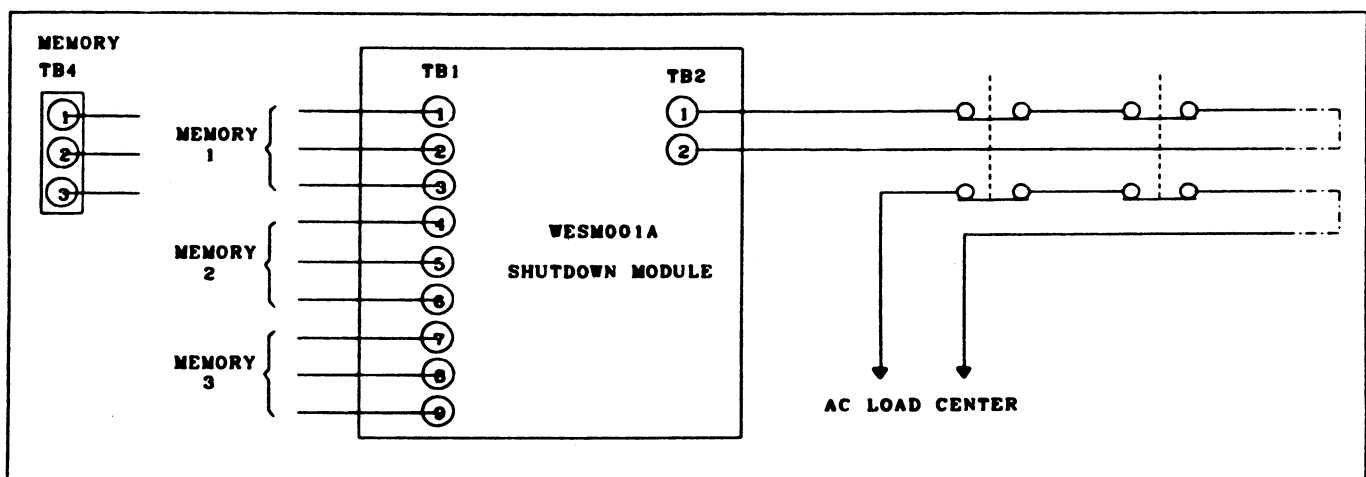


FIGURE 4-5. MULTIPLE MEMORY UNIT EMERGENCY OFF

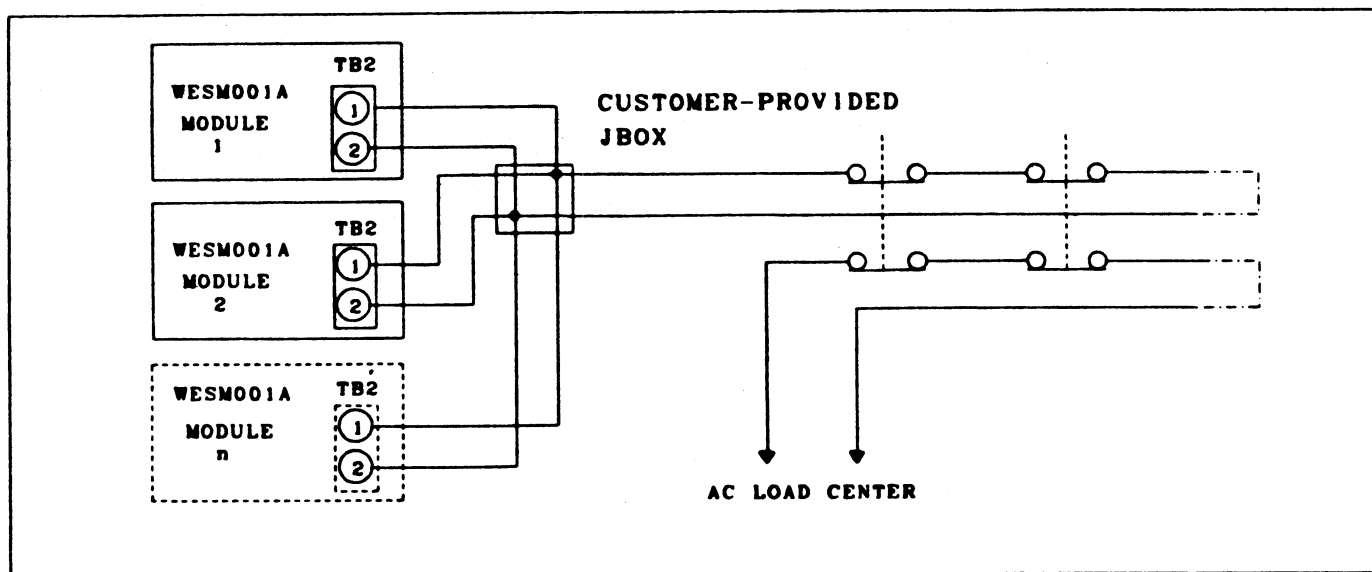


FIGURE 4-6. MULTIPLE SHUTDOWN MODULE EMERGENCY-OFF

#### MG CONTROL UNIT WIRING CONTROL CONNECTIONS

The control connections for all functions of emergency control and MG control are shown in Figure 4-7. No. 14AWG (1.6mm) wire can be used for emergency control connections. See the Installation Outline Drawing for the Motor Generator Control Unit in Section 8 for the wire size versus length for the MG control wiring. Both ends of the control wiring must be permanently tagged to identify the connections to be made.

The emergency-off switches are to be wired in series and the site layout may dictate the best arrangement to do this. One method would be to run two wires from each emergency switch to the MG control unit and make the necessary series connections inside the MG control unit case. An emergency-off switch must be located at each exit/entrance door.

In the USA, the National Electrical Code (NEC) NFPA 70 classifies the emergency-off circuit wiring connecting the MG control unit to the emergency-off switches and to the devices disconnecting main service power to the computer room (and to the air conditioning system) serving the computer room as class 1 remote-control circuits to safety-control devices. The wiring method for class 1 systems must comply with Article 725 of the (NEC) NFPA 70, or with local code requirements for remote control safety circuits where such local code differs. In Canada, refer to the Canadian Electrical Code, Part 1, Section 16, Class 1, Circuits.

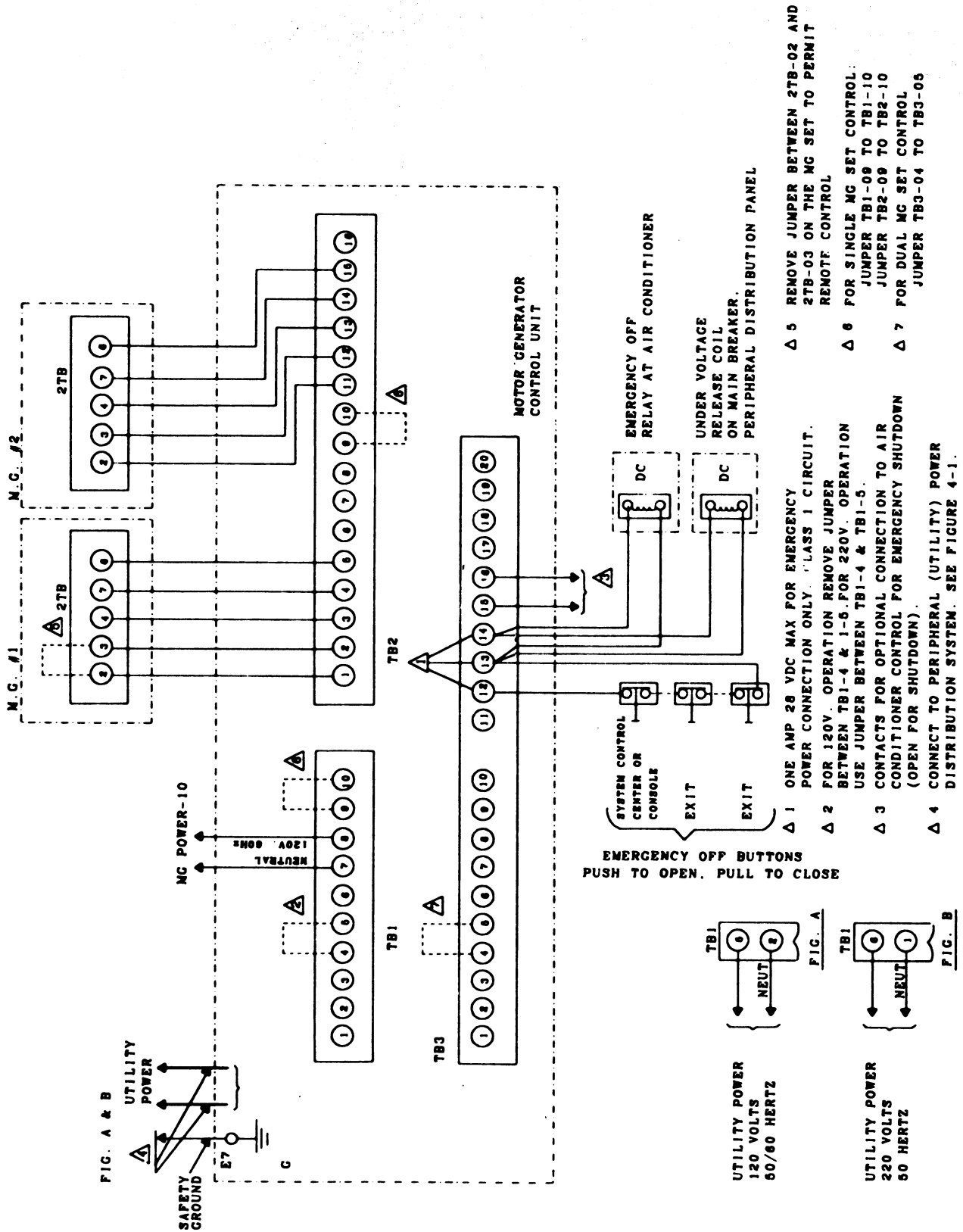


FIGURE 4-7. MOTOR GENERATOR CONTROL UNIT CONNECTIONS

### **COOLING SYSTEM REQUIREMENTS**

Just as any other equipment consuming electrical energy, computer equipment produces heat. Therefore, as a result, air conditioning becomes an important consideration in the site planning. The equipment and media can only tolerate environmental conditions within certain limits. Temperature regulation, humidity control and air filtration are all essential to proper system operation.

Use the following parameters as a guide in the design and installation of your computer room air conditioning:

1. The operating environment can vary between 68 degrees to 78 degrees F (20 degrees to 26 degrees C) and a relative humidity of 40 to 60 %. When the design point has been selected, the temperature and humidity in the room, as measured at the breathing line of 5 ft 4 in. (1.6m) from the floor and at various places in the room, should not fluctuate from the design point by more than plus or minus 2 degrees F (one degree C) and plus or minus 5% relative humidity, either during operation or when the computer is completely shut-down. A design point of 73 degrees F (23 degrees C) and 50% relative humidity is recommended.

Cassettes, diskettes, paper media and any other necessary supplies stored or used may have more stringent environmental requirements than the hardware. These requirements should be considered when designing your air conditioning system.

2. The equipment requires a clean atmosphere. Corrosive and dusty atmospheres, such as those present in steel mills and chemical plants, are not considered normal. The room should be under positive air pressure with filtered input air. The humidifier, when required, can be located in the supply air stream if care is taken to ensure against condensation on the equipment.
3. In addition to providing the air conditioning and humidity control for the computer, the air conditioning system should provide a comfortable working environment for personnel. Therefore, most facilities are designed for 73 degrees F (23 degrees C) and 50% relative humidity, which is the recommended design point for computer operations.

### **COOLING SYSTEM CAPACITY**

The heat loads, in thousands of BTU per hour, for each unit of the computer system are shown in Section 8 of this manual. This rating is derived from the kilowatt rating of the unit. Derating for an intermittent duty cycle is not recommended.

Be sure that the calculations for system capacity give adequate consideration for the following:

- Growth in the computer system.
- Other heat producing equipment in the room.
- Personnel in the room.
- Outdoor air for ventilation.
- Roof, wall and window heat loads.
- Lighting load.
- Humidity control.

It is suggested that the walls of the room be adequately sealed to reduce operating costs and eliminate moisture problems.

### AIR FLOW REQUIREMENTS

All equipment is designed for forced air cooling by means of blowers located within each cabinet utilizing the room air.

Air distribution in the computer room may be through overhead ductwork or plenum or under-floor ducts or plenum. Refer to Figure 5-1. Careful consideration must be given to the placement, design of air outlet grilles and the air returns to provide proper air flow within the room. The air flow should be restricted to the computer room only. Air flow from the air conditioning system must not interfere with air flow in the equipment.

**Note:** Some local codes may require under-floor cables to be installed in sealed ducts if the under-floor area is used as a plenum.

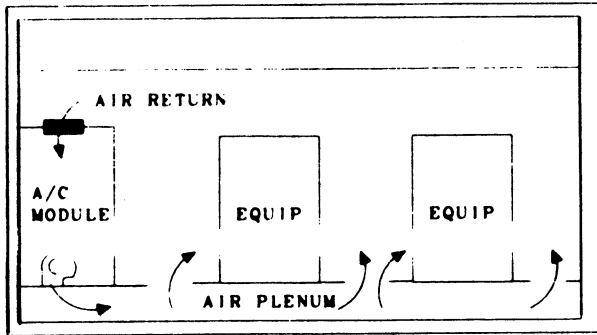
In the under-floor air distribution system, conditioned air is supplied to an under-floor ductwork or plenum. Distribution to the room is through adjustable grilles located so that cold air mixes with room air before being taken into the computer cabinets by the internal blowers. Grilles should permit a high volume, low velocity pattern and must be equipped with adjustable dampers.

In the overhead air distribution system, the incoming air should enter the room through diffusers which will spread the air throughout the room. Diffusers must be of the adjustable air pattern type and must be balanced to provide a distribution of air which will eliminate hot spots. Diffusers must not be located above perforated ceiling sections due to the difficulty of balancing air flow through these materials to eliminate hot spots.

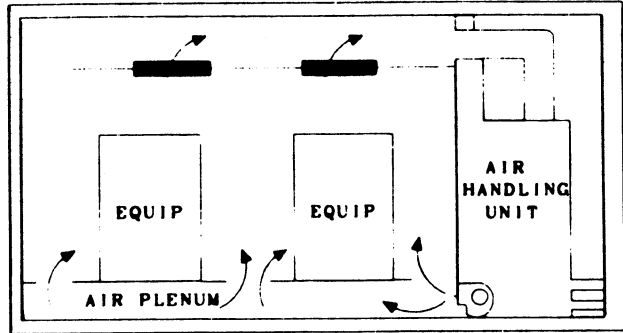
### SITE ENVIRONMENT REQUIREMENTS

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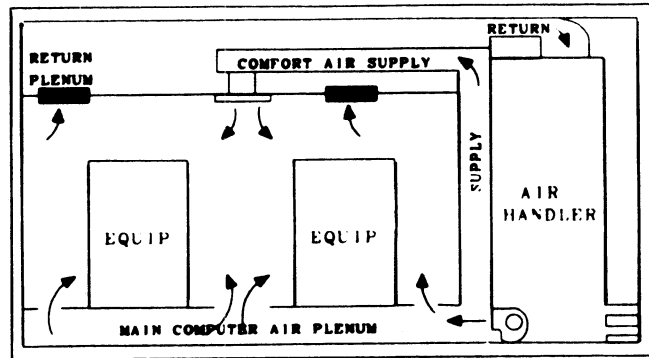
TYPICAL COMPUTER AIR CONDITIONING EXAMPLES



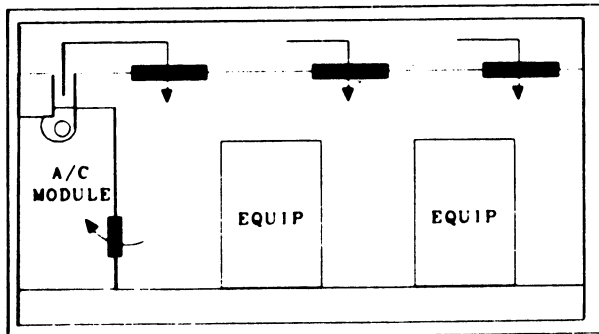
MODULAR AIR DISTRIBUTION SYSTEM



CONVENTIONAL INDEPENDENT SYSTEM



COMBINATION SYSTEM



OVERHEAD AIR DISTRIBUTION

1. A DESIGN POINT OF 73F AND 50 PERCENT RELATIVE HUMIDITY IS RECOMMENDED
2. ALL EQUIP IS DESIGNED FOR FORCED AIR COOLING BY MEANS OF BLOWERS LOCATED WITHIN EACH CABINET CIRCULATING ROOM AIR THROUGH THE CABINET.

FIGURE 5-1. TYPICAL COMPUTER AIR CONDITIONING EXAMPLES

## TEMPERATURE AND HUMIDITY MONITORING

Continuous monitoring of installation temperature and humidity conditions is recommended. This can best be accomplished through the use of recording instruments that provide a continuous visual record of the conditions in the computer room. As a result, if the air conditioning requirements are not met, a visual record is available to indicate the extent and duration of the undesirable condition. A quick check of the record indicates whether a drying-out period is required and if so, the duration. In some cases, the temperature and humidity recording instruments may save computer downtime.

Direct reading instruments with seven-day charts should be used to monitor temperature and humidity conditions. These instruments should be placed so as to satisfy the following conditions:

1. At the breathing line, 5 ft 4 in. (1.6m) above the floor.
2. Not in line with the air stream from the distribution grilles.
3. Not in line with the air discharge from the computer equipment.

The recorder should satisfy the following criteria:

- Range - The relative humidity range should be 0-100%. The temperature should be zero degrees to 100 degrees F (-18 degrees to 38 degrees C).
- Accuracy - Relative humidity reading should be accurate to within plus or minus 2% of the total span. The temperature reading should be accurate to within plus or minus 1% of the total span.
- Period per revolution - seven days.
- Drive - Mechanical (spring wound), or electrical.
- Mounting - The recorder may be portable or permanently mounted.

## TEMPERATURE CONTROLS AND ALARMS

Even a short period of overheating while the system is operating can cause system malfunction. Problems may also be experienced if the temperature of the air entering the units drops below the recommended limits.

A well designed control system is essential to eliminate these causes of lost system operating time. Controls should be tamper-proof and should be located as appropriate for temperature measurement. A method of capacity modulation control is suggested to meet the temperature and relative humidity variation permitted.

Alarms should be provided to alert the system operator when the environment approaches the operating limits of the computer system. If the equipment is left unattended, or if no alarms are provided, automatic controls are required which will shut the system down when temperature or humidity exceeds specifications.

## AIR CLEANING

Minimizing airborne dust improves the efficiency of the air conditioning system, reduces the frequency of cleaning the equipment and media and improves the computer system reliability. Mechanical air filters will suffice unless the installation is subject to salt air, corrosive gases, metallic dust particles or other unusual conditions. The air filters should have an efficiency rating of not less than 20% by the National Bureau of Standards discoloration test. The filters must meet UL and fire code standards (refer to NFPA 90A publication<1>).

Electronic air cleaners are highly recommended where clean air is a major concern. They require special application engineering to avoid electromagnetic interference with the computer system. Honeywell offers a complete line of electronic air cleaners which can be installed by your air conditioning contractor. For direct information and assistance in sales or service contact:

Honeywell Inc.  
Electronic Air Cleaners G2122  
P.O. Box 524  
Minneapolis, Minnesota 55440

## BALANCING

After the system is installed and operating, the air supply dampers must be adjusted to balance the temperature throughout the room. Care must be taken to locate and eliminate hot spots. It is suggested that an independent firm specializing in air balancing be retained by the customer to balance the room and provide certified test results.

In large facilities containing more than two systems, different design point temperatures may exist at remote areas of the room. This should cause no problem as long as, at any one measurement point, the temperature does not change more than previously described as being allowable.

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<1>Available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.



## DUST CONTROL, MAINTENANCE

Control of dirt and dust is important for satisfactory system operation. To avoid raising dust that will clog the air conditioning system and computer filters, a tightly sealed vacuum cleaner with a good filter is recommended for cleaning the computer room. Floors can be cleaned with a moistened mop.

Also, a regular schedule of filter maintenance in the air conditioning system must be established. Periodic cleaning of the sub-floor area is recommended to prevent accumulation of dirt and debris. Impregnated mats at each entrance reduce dust brought in from other areas on the soles of shoes.

Installation and maintenance of all non-Honeywell equipment and purchased or leased Honeywell auxiliary support equipment is your responsibility unless covered by a specific contract with Honeywell which expressly provides otherwise.

**DATA MODEM FOR DISTRIBUTED MAINTENANCE SERVICE**

For Honeywell's Distributed Maintenance Service (DMS), you will need to provide a Honeywell DCD2124 Data Modem<1>, or its equivalent, and a telephone at the maintenance console. Table 6-1 gives the jumper connections or switch settings necessary for proper operation of the data modem on DMS.

Examples of equivalent data modems are Western Electric/Bell Data Set 212A, Vadic VA3451P and Rixon T212A. In countries other than the USA, contact your local telephone company for equivalent type data modem information.

The local telephone company's communications representatives should be consulted early enough that all data modem lines will be installed and checked out prior to system delivery.

**TABLE 6-1. DMS DATA MODEM OPTIONS**

FEATURE	CHOICE	DESCRIPTION
Tip Ring Make Busy	OUT	Connects Resistor from Tip to Ring which Makes Line Go Busy
CC Indication for Analog Loop	ON	CC Circuit ON during AL Test
Speed Control	HS Button	HS Button Controls Speed
Interface Controlled Make Busy/ Analog Loop	OUT	AL/Make Busy Controlled Only by AL Button, CN Internally Held Off
Transmitter Timing	INTERNAL	1200BPS Transmitter Driven by Internal Clock
1200 BPS Operation	Asynchronous/ Start-Stop	Character-Oriented Operation in the High Speed Mode

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<1>Order from Honeywell National Distribution Center Sales Catalog, CR39 available from Honeywell National Distribution Center, 47 Harvard Street (04), Westwood, MA 02090

Table 6-1 (CONT). DMS Data Modem Options

FEATURE	CHOICE	DESCRIPTION
Character Length	10 Bit	Character Format is 10 Bit for 1200BPS Asynchronous/Start-Stop
Receiver Responds to Digital Loop	IN	Digital Loop Can be Remotely Activated in the High-Speed Mode
Interface Controlled Remote Digital Loop	OUT	RL Circuit Not Connected to Interface
Loss of Carrier Disconnect	OUT	Loss of Carrier Does Not Drop Call
Receive Space Disconnect	IN	Call is Dropped If Steady Space is Received
CB and CF Indications	COMMON	CB Circuit is Turned Off Whenever CF Circuit Goes Off
Send Space Disconnect	IN	Steady Space Transmitted Before Disconnecting
Automatic Answer	OUT	No Response to Ringing Indication-Requires a Handset
Answer Mode Indication-CE	OFF	Circuit CE Turns Off After Call is Answered
Speed Mode	DUAL	Data Can Cross Interface in Both Speed Modes
Interface Speed Indication	OUT	Circuit CI Disconnected From Interface
CN and TM Assignments	CN25, TM NC	CN on Pin 25, TM Not Connected
Signal Ground to Frame Ground	IN	Protective Ground and Signal Ground Tied Together

# UNINTERRUPTIBLE POWER SUPPLY

If the Ride-thru option or the optional MG capabilities of the central system are not sufficient for your needs, you should consider the purchase of an uninterruptible power source (UPS). Figure 6-1 illustrates two concepts of UPS. With only the storage batteries as backup, you would be limited in the length of time your entire system could continue to operate. From a practical viewpoint, it is suggested that 15 minutes of battery holdup time be provided. However, if you have the capability to switch over to a gasoline or diesel engine generator, you could continue to operate regardless of the length of time the utility power is interrupted.

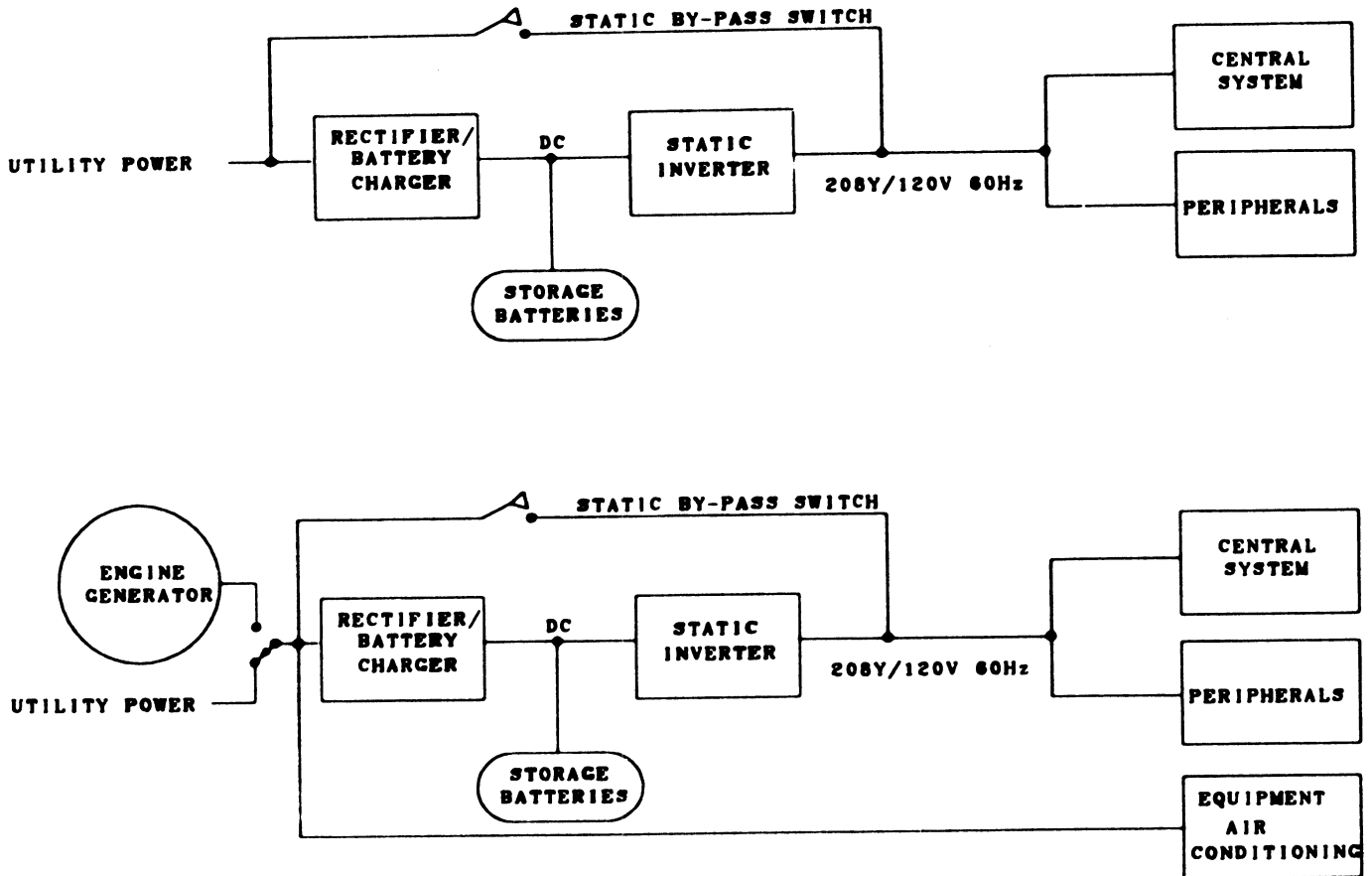


FIGURE 6-1. TYPICAL UNINTERRUPTIBLE POWER SUPPLY SYSTEMS



**GENERAL PRECAUTIONS**

The computer room and the tape/disk library should be monitored during nonoperating periods for fire and over-temperature conditions. Special precautions should be taken if the equipment is left with power on. The equipment should be protected against damage due to condensation, leakage or other discharges from any overhead piping.

**PERSONNEL TRAINING**

The site personnel must be thoroughly trained in the function of all fire detector equipment, the desired response to alarm conditions and the use of all available extinguishing equipment. This training should include both the capabilities and the limitations of each available type of extinguisher.

Training should include, but not be limited to:

- Emergency telephone numbers.
- Emergency power shutdown procedures.
- Location and use of available fire extinguishing equipment.
- Special instructions on extinguishing a fire in data processing equipment.
- Personnel evacuation procedures.

**FIRE PROTECTION EQUIPMENT**

Halon 1301 or Halon 1211 fire extinguisher types of suitable size and number should be provided in the computer room. These extinguishing agents are nonconductors of electricity and are for Class C fires (may be applied to energized electrical equipment). The extinguishers should be provided and maintained in accordance with NFPA No. 10 or in accordance with all applicable local codes. Carbon dioxide extinguishers should be used with caution around personnel because of the very low temperatures of the released agent.

While your selection of one or more of the extinguisher types will be used as the primary extinguishing agent, it is advisable to have a standpipe or hose unit within effective range of the system area as a secondary extinguishing agent for Class A hazards (paper or other solid combustible materials).

Local fire protection codes or fire insurance regulations may require the installation of automatic extinguishing systems. If this is a requirement, you may wish to consider one of the following systems:

1. Automatic HALON 1301 Total Flooding System.

An automatic total flooding HALON 1301 system may be used to provide complete machine room protection. The system requires automatic early detection of fire and timed release of the 1301 extinguishing agent. The system must be engineered for the specific area to be protected in accordance with NFPA No. 12A, Halogenated Extinguishing Agent Systems - Halon 1301.

2. An Automatic Sprinkler System.

If an automatic sprinkler system is to be utilized, it is to be installed in accordance with NFPA No. 13, Installation of Sprinkler Systems.

#### **FIRE DETECTION AND ALARM SYSTEM**

The Commercial Division of Honeywell Inc. can provide complete custom designed fire detection and alarm systems to meet requirements for computer room protection. The system may include ionization-smoke detection, heat detection, alarm annunciation, alarm signalling and interface to new or existing fire alarm equipment as well as tie-in to fire extinguishing systems. For further information, if desired, please contact:

Honeywell Inc.  
P.O. Box 524  
Minneapolis, Minnesota 55440

#### **EMERGENCY LIGHTING**

Some local codes require a special battery operated lighting unit that will automatically illuminate an area in case of power or lighting circuit failure. These units are wired to and controlled by the lighting circuit. Even when not required by code, it is recommended that such lighting be installed.

#### **LIGHTNING PROTECTION**

To help ensure the safety of the equipment and personnel, the primary transformers should be protected by lightning arresters. It is highly desirable that similar protection be provided at the service entrance to the building. These arresters will reduce the possibilities that excessive voltage and currents due to lightning strikes will seek some indeterminate, low impedance path to ground, such as building metallic structures or equipment cabinets.

**SECTION 8  
INSTALLATION PLANNING**

This section contains summary information and the individual specification sheets on each major unit in your system. The 50Hz models numbers are enclosed in parenthesis (Model Number) where applicable. Your Honeywell representative can provide updated sheets if the specifications change or for additional products as required for system expansion.

In some units, power requirements vary with the quantity and type of option modules. The specification sheets show the maximum value so that future expansion of the option content will not impact the facility design. Typical unit electrical values may differ slightly between units due to manufacturing tolerances. They have not been derated for duty cycle. Size and duration of starting current are shown only where significant. Primary distribution is sized by the nameplate rating to meet the NFPA 70 electrical code.

When units are installed with an under-floor cooling air supply, the open area between the cables must be sealed with a removable, noncombustible sealant.

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Site preparation information for certain equipment not covered in this manual is available in the following publications:

<u>EQUIPMENT</u>	<u>ORDER NUMBER</u>
VIP Terminals	AX78
Page Printer I	AR53
Page Printer II	CJ81
Sorters	AY52
Sorters	CP77

Order from:

Honeywell Information Systems Inc.  
47 Harvard Street  
Westwood, MA 02090

Attn: Manager Computer Supplies MA06-01



**SUMMARY  
SYSTEM ELECTRICAL REQUIREMENTS**

**GENERAL**

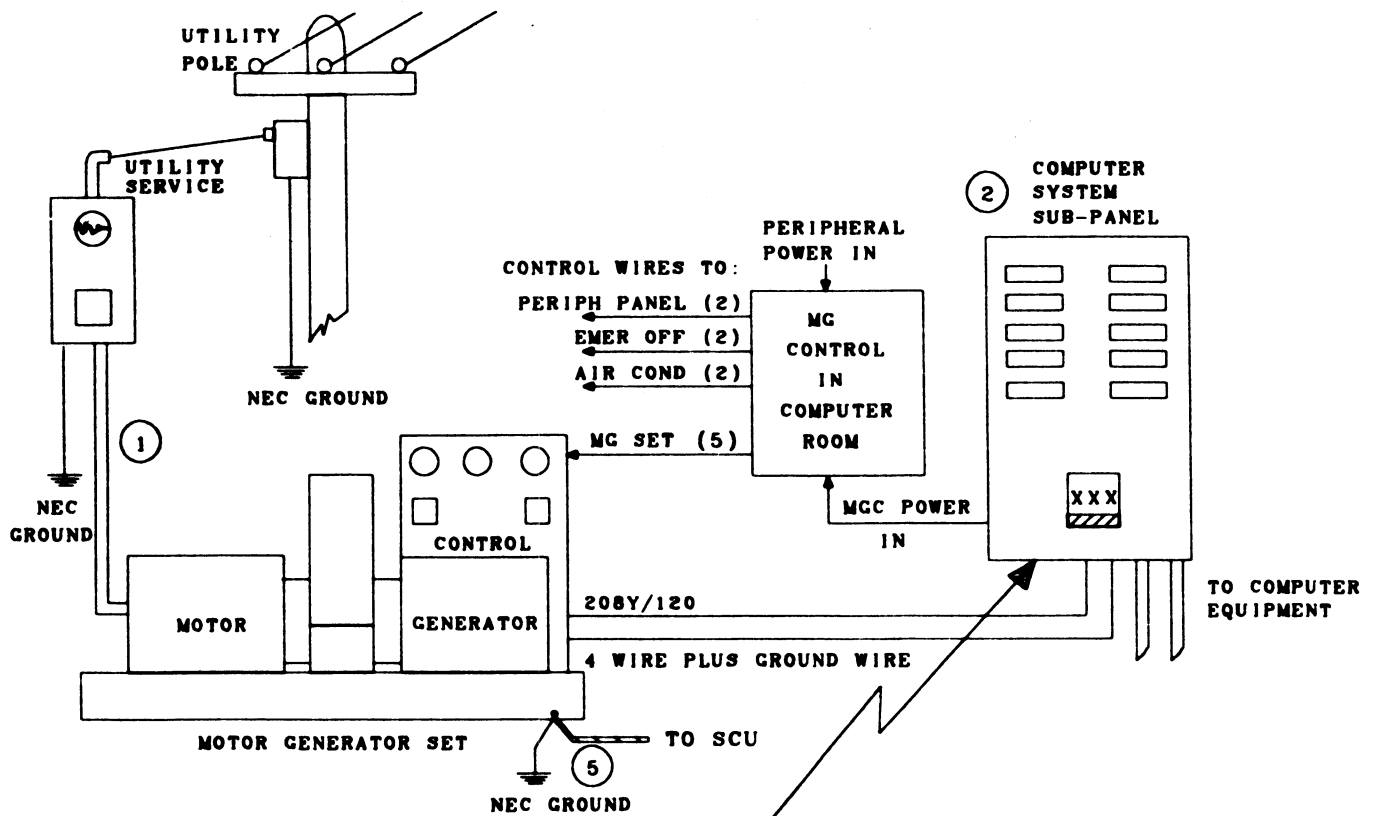
- A. The AC power is to be supplied by the customer based on the requirements listed in these specifications.
- B. The electrical power source is to be independent and isolated from all other loads.
- C. The customer is solely responsible for costs of installation and/or modification of all power and signal cables not supplied by Honeywell, including Honeywell supplied cables which require building alterations to accomplish installation. All wiring installations must be in accordance with the national electrical code and all other local codes and ordinances.
- D. An allowance for future expansion of your site is recommended.
- E. The system is designed for under-floor access of the logic and power cables.

**REQUIREMENTS**

- A. The customer shall supply and install all AC receptacles as required.
- B. The electrical specifications are:
  - 1. Voltage: 208Y/120 + or - 10%, 3 phase, 60Hz.
  - 2. Frequency: 60Hz + or - 1/2Hz.
  - 3. Number of wires: 4 wires, Y connected, plus a fifth wire for equipment ground. (Aluminum wire is NOT acceptable.)
  - 4. Maximum load: \_\_\_\_\_ kVA.<1>
- C. The central system(s) is powered through a motor generator. The peripheral subsystems require power isolation and may require voltage regulation, depending upon local conditions.
- D. The equipment neutral wire must not be connected to the building ground except at the power source (transformer, or building service entrance).
- E. Interconnecting cables between units shall be protected from mechanical damage.

---

<1> Determine total load from your site configuration.



① UTILITY POWER TO THE MG MAY BE 208, 440 OR 480 VOLTS. THE MG IS REQUIRED FOR CENTRAL SYSTEMS ONLY.

- ② CIRCUIT BREAKER REQUIRED FOR EMERGENCY CONTROL PANEL.
- ③ CONDUIT AT THE COMPUTER EQUIPMENT JUNCTION BOX MUST BE ELECTRICALLY INSULATED.
- ④ ALL GROUND CONDUCTORS MUST BE INSULATED
- ⑤ GROUND BRAID SUPPLIED BY HONEYWELL

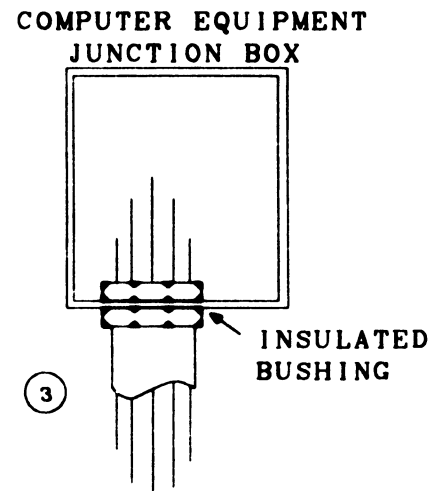
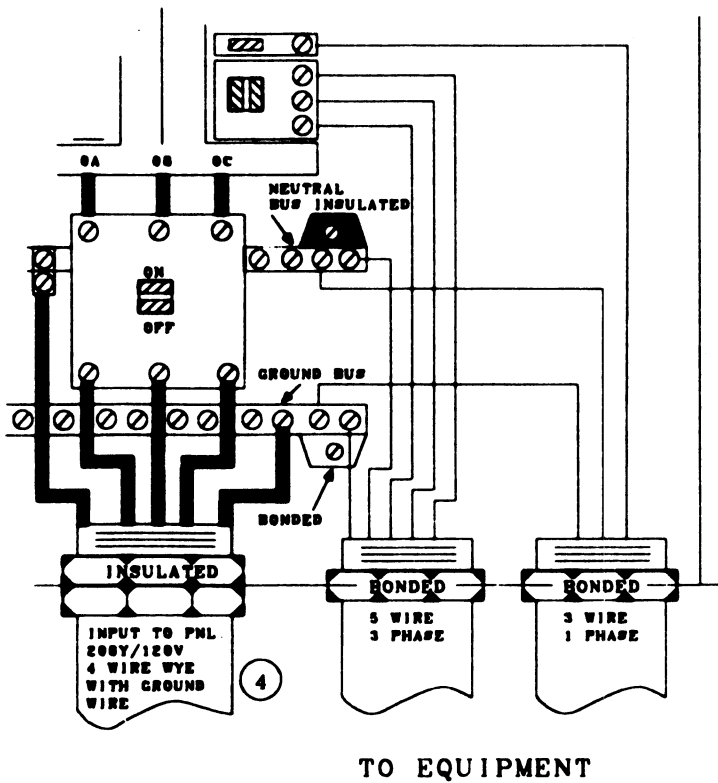
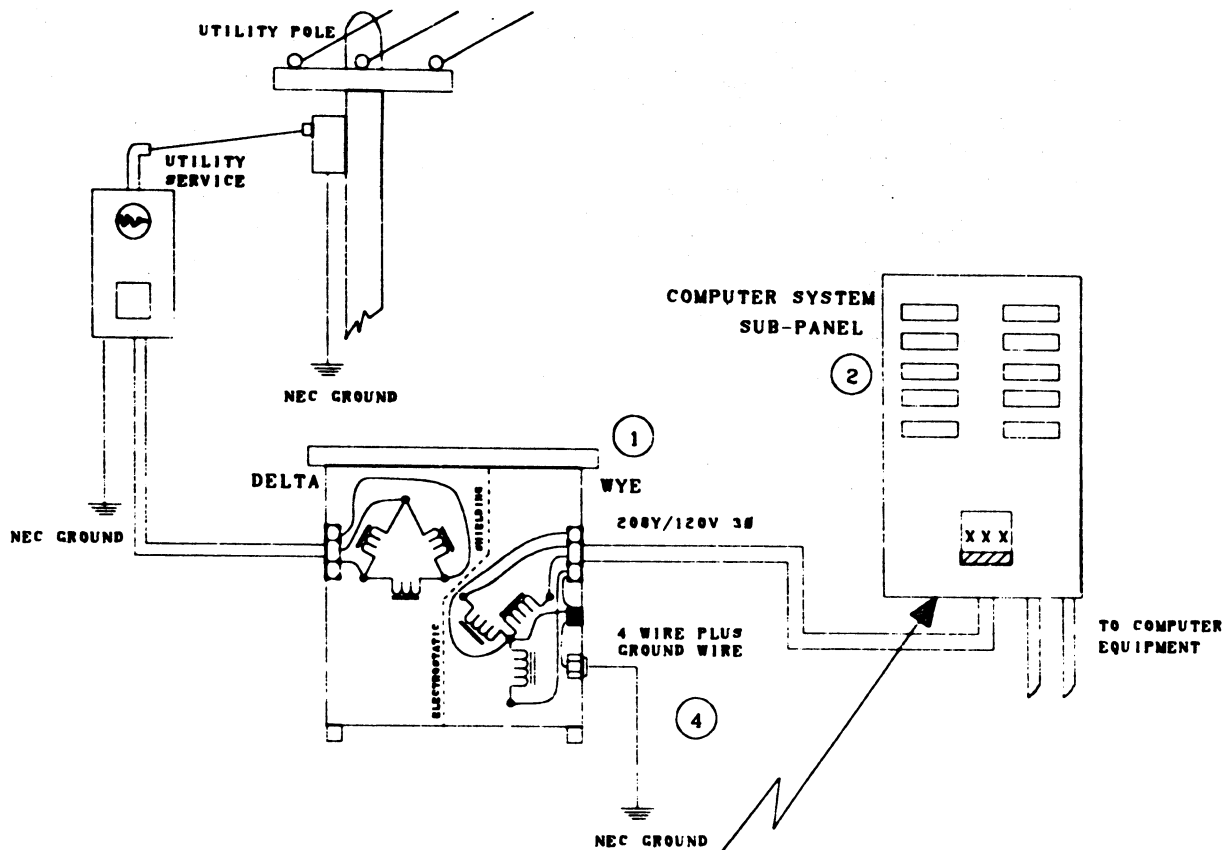
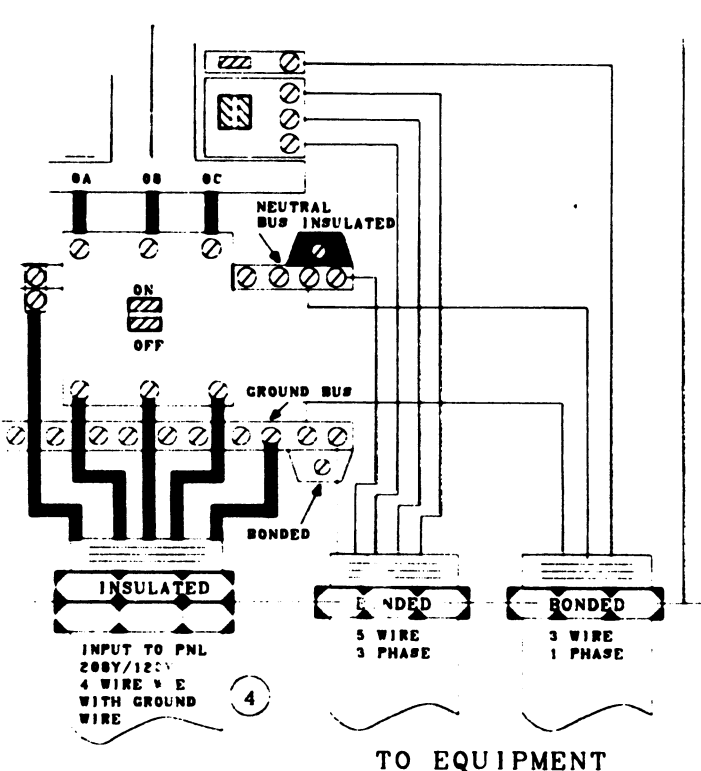


FIGURE 8-1. ELECTRICAL CONNECTIONS (MOTOR GENERATOR)  
INSTALLATION PLANNING

DL63-01



1 THIS TRANSFORMER PROVIDES ISOLATED POWER TO THE COMPUTER SYSTEM. NO OTHER LOADS SHOULD BE ON THIS TRANSFORMER.



- 2 CIRCUIT BREAKER REQUIRED FOR EMERGENCY CONTROL PANEL.
- 3 CONDUIT AT THE COMPUTER EQUIPMENT JUNCTION BOX MUST BE ELECTRICALLY INSULATED.
- 4 ALL GROUND CONDUCTORS MUST BE INSULATED

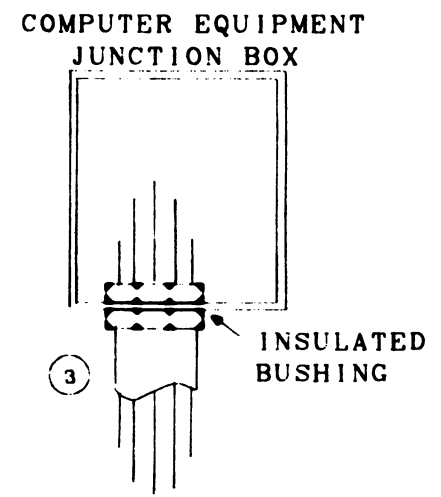


FIGURE 8-2. ELECTRICAL CONNECTIONS SPECIFICATIONS

**SUMMARY  
SYSTEM ENVIRONMENTAL REQUIREMENTS**

**GENERAL**

The heat dissipation figures listed for each unit do not include the heat gain from other sources: e.g., lighting, people, building transmission and fresh air loads.

**REQUIREMENTS**

The air conditioning specifications are:

1. Cooling required for the equipment only: \_\_\_\_\_ Btu/hr.,  
or \_\_\_\_\_ watts. (This is equivalent to \_\_\_\_\_ tons.)<1>
2. Temperature: 68 to 78 degrees F, + or - 2 degrees F  
(20 to 26 degrees C, + or - 1 degree C)  
Measured at the breathing line.
3. Relative humidity: 40% to 60% + or - 5%.
4. Filtration: Normal, unless the environment is subjected to corrosive gases, salt air, or other unusual conditions, in which case special filtering will be required.
5. Computer rooms require year-round cooling. (Window type air conditioning units are not appropriate for this use.)
6. Costs for installing and/or modifying the air conditioning will be borne by the customer.

---

<1> Determine total load from your site configuration.

**EQUIPMENT SUMMARY DATA**

Unit	Circuit Breaker	Wire	Amps A	Per B	Phase C	kVA	kW	kBTU	lb
--Central System--									
CPU66EA	3P30A *	5/#10	9.2	8.0	12.1	3.5	3.3	11.2	1900
CPU66BA, CP6600	3P30A *	5/#10	8	7	8	2.8	2.5	8.5	1800
CP6100	3P30A *	5/#10	9.0	9.8	9.8	3.6	3.3	11.5	1800
CPS6650	3P30A *	5/#10	15.4	14.3	15.9	5.6	5.2	17.7	2700
CPS8802	3P30A *	5/#10	17.1	18.7	16.6	6.4	6.0	20.5	2700
AMM001, MMM001A	3P15A *	5/#14	5.0	5.4	3.3	1.7	1.5	5.1	850
MCP601A	3P20A *	5/#12	9.0	9.0	9.0	3.2	2.9	9.9	1665
CSM601	NA *	NA	10.3	10.9	9.5	3.7	3.3	11.3	1425
DC8634	3P15A *	5/#14	7.5	6.5	4.0	2.4	2.2	7.5	1150
--Diagnostic Processor--									
DPU100A	1P15A *	3/#14	5.5	-	-	0.7	0.5	1.6	433
MPU9001	1P15A *	3/#14	7.9	-	-	1.0	0.7	2.4	326
--Compatibility Mode Option--									
CPF6001	3P30A	5/#10	14.0	19.0	18.0	6.1	5.8	20.0	2860
--Consoles--									
CSU6601	1P15A *	3/#14	6.0	-	-	0.8	0.6	2.0	200
CSU6004	3P15A *	5/#14	0.5	1.0	1.2	0.3	0.2	0.7	520
CSU6005	3P15A *	5/#14	2.6	2.6	2.6	0.9	0.8	2.8	850
CSF600X	1P15A	3/#14	2.1	-	-	0.3	0.2	0.9	65
--Datanets--									
DCU6201/6202	3P15A *	5/#14	1.3	2.1	0.8	0.5	0.4	1.4	850
DCP6616-6632	3P15A *	5/#14	7.8	6.8	6.3	2.4	2.1	7.2	2000
DCU66X1	3P30A	5/#10	20	20	20	7.8	4.9	16.6	900
DCU8010	2P30A	4/#10	23	23	-	5.5	3.5	11.9	550
--Peripheral Processors--									
MSP/MTP/URP	3P15A *	5/#14	5.2	4.0	5.4	1.8	1.6	5.5	725
MSP0611/0612	3P15A	4/#14	7.2	6.7	5.6	2.4	2.1	7.0	1100
MTP0611	3P15A	4/#14	6.1	8.0	7.3	2.5	1.9	6.6	1100
--Mass Storage--									
MSU0310	3P15A	4/#14	4.0	3.0	3.0	1.2	1.0	3.5	425
MSU0400 (CC)	3P50A **	5/#6	***5.0	7.0	5.0	2.0	1.6	5.6	850
MSU0402/0451	2P20A	3/#12	7.5	7.5	-	1.6	1.3	4.5	700
MSU0500/0501	3P20A	5/#12	***7.5	7.5	7.5	2.7	2.1	7.3	1080
--Magnetic Tapes--									
MTU0410	1P30A	3/#10	17.0	-	-	2.1	1.7	5.8	800
MTU0500	3P15A	4/#14	***6.2	5.7	6.2	2.2	1.8	6.1	750
MTU0600	3P20A	4/#12	***8.9	11.7	10.6	4.2	3.8	13.0	1020
MTU0610	3P15A	4/#14	***9.8	9.8	9.2	3.1	2.9	9.9	900
MTU0630	1P30A	3/#10	15.8	-	-	1.9	1.5	5.1	650

---

\* Connect to MG or UPS power.  
 \*\* Common power entry at Cable Cabinet (CC) for up to 8 units.  
 \*\*\* Devices are phase sensitive.

**EQUIPMENT SUMMARY DATA, (continued)**

Unit	Circuit Breaker	Wire	Amps Per Phase			kVA	kW	kBTU	lb
			A	B	C				
--Card Equipment--									
CRU0501	1P15A	3/#14	2.0	-	-	0.2	0.2	0.7	73
CRU1050	1P20A	3/#12	9.2	-	-	1.1	1.0	3.4	460
PCU0120	3P15A	5/#14	***4.6	3.3	5.4	1.6	1.3	4.6	800
PCU0121	3P15A	5/#14	***7.0	8.5	8.0	2.8	2.5	8.5	800
CCU0401	3P15A	5/#14	***7.0	8.5	8.0	2.8	2.5	8.5	800
--Printers--									
PRU0901/1201	1P15A	3/#14	8.1	-	-	1.0	0.8	2.7	460
PRU1100	3P15A	5/#14	6.5	7.2	6.5	2.2	1.9	6.6	1220
PRU1200/1600	3P15A	5/#14	***8.2	9.1	9.3	3.1	2.6	8.9	1780
--Document Handlers--									
DHP0700/0701	3P15A	5/#14	7.8	6.8	6.3	2.4	2.1	7.2	2000
DEC6000	3P15A	5/#14	7.8	6.8	6.3	2.4	2.1	7.2	2000
DHU0803/0814	3P15A	5/#14	***8.0	8.2	6.1	2.5	2.1	7.2	1700
DHU1604-1616	2P70A	4/#4	27.0	27.0	-	5.6	4.8	16.4	1200
DHU1620-1632	NA	NA	10.0	10.0	-	2.0	1.7	5.8	500
--Peripheral Switch--									
PSU0200/0201	2P15A	4/#14	1.6	1.6	-	0.4	0.3	1.0	400
--Board Tester--									
BTF655	1P15A	3/#14	8.0	-	-	1.0	0.9	3.0	720

---

\*\*\* Devices are phase sensitive.

**DATA CABLES  
SUMMARY DATA**

From	To	Maximum Length ft(m)*Note 1*
DC8634	Peripheral Processors	75(22.8)
DC8634	Card Equipment and Printers (DAI)	75(22.8)
DC8634	PRU0901/1201 PDSI cable	492(150)
	Fiber Optics cable	6562(2000)
DC8634	Console	75(22.8)
DC8634	DN	75(22.8)
DN	Modems	50(15.2)
DPU100A, MPU9001	various	50(15.2)
MSP	MSU	75(22.8)*Note 2*
MTP	MTU	75(22.8)
URP	Card Devices & Printers	78.7(24)
Peripheral Switch	various	Subtract 6(1.8) from the maximum cable length for each switch unit the cable is routed through.

**NOTES:**

1. Allow approximately 5 ft (1.5 m) stubout length on each end of the cable when determining the distance between units.
2. To MSU0400, the maximum cable length is:
  - 50(15.2) for 4 drives on the Cable Cabinet (CC).
  - 50(15.2) for 8 drives with CC in the center.
  - 40(12.2) for 8 drives with CC on the end.

## FIBER OPTICS CABLE INFORMATION

The installation of fiber optics cables is similar to wire cables, but requires certain care and consideration to help ensure satisfactory performance during operation.

### IMPORTANT

TO IMPLEMENT THIS OPTION, IT IS THE CUSTOMER'S RESPONSIBILITY TO INSTALL THE CABLE. IT IS CSD'S RESPONSIBILITY TO CHECK THE CABLE BEFORE AND AFTER INSTALLATION, THEN CONNECT THE CABLE TO THE EQUIPMENT. IF THE CABLE IS FOUND TO BE DEFECTIVE AFTER INSTALLATION, CSD WILL NOTIFY THE CUSTOMER AND IT IS THEN THE CUSTOMER'S RESPONSIBILITY TO EMPLOY A QUALIFIED FIBER OPTICS SERVICE ORGANIZATION TO LOCATE THE DEFECT AND DETERMINE WHETHER THE CABLE IS TO BE REPAIRED OR REPLACED.

The information needed to plan and install fiber optics cables is listed below.

### TEMPERATURE

- Storage:  
-31° F(-35°C) to 185° F(85°C)
- Operational:  
Cable (outside of the computer room)  
-13° F(-25°C) to 176° F(80°C)  
  
Cable with Connectors (outside of the computer room)  
14° F(-10°C) to 140° F(60°C)

### CABLE STRENGTH

- Installation:  
165 pounds force (750N) with a minimum bend radius of 7 inches(178mm)  
  
DO NOT pull on attached connectors.
- Operational:  
55 pounds force (250N) with a minimum bend radius of 4 inches(102mm)  
  
No force is to be applied to the connectors.
- Cable Crush Resistance (between two parallel plates):  
115 lb/in.(200N/cm)



## FIBER OPTICS CABLE INFORMATION (CONT)

### CABLE FLEXIBILITY

- Minimum bend radius with no load:  
0.8 in.(20mm) for a short term  
2 in.(50mm) for a long term

### INSTALLATION CONSIDERATIONS

- Before installing the cable the customer should consult with the Honeywell Site Planning Representative.
- The cable must be checked for optical continuity by the Honeywell CSD Representative prior to and after installation by the customer.
- During cable installation special unreeling and handling equipment may have to be used to stay within the limits specified.
- To prevent damage to the cable's glass fiber, the cable should not be knotted, folded, pinched or strained during installation.
- The cable's connectors are to be protected during installation. No force is to be applied to the connectors.
- Do not allow the weight of heavy cables to cross fiber optics cables in ducts or trays.
- For installation in conduit, make sure there are no sharp edges or sharp bends. Pull boxes should be installed at approximately 150 ft(50m) intervals for long runs (use a shorter interval when several bends are involved).
- To ensure the minimum bend radius is not exceeded and to protect the cable where sharp edges cannot be avoided, wrap the fiber optics cable with foam rubber padding. Use cable ties to hold the padding in place.
- For a very long vertical run, it is recommended that the cable be clamped at about 6 ft(2m) intervals.
- Consult with your Honeywell representative if you are planning an aerial, burial or more ruggedized installation of the fiber optics cable.

**CONNECTOR SYMBOLS  
used on  
INSTALLATION OUTLINE DRAWINGS**

Type	Amps/ Volts	Phases /Wire	UNIT PLUG (Honeywell)			REQUIRED RECEPTACLE (Customer)		
			Mfg.*	NEMA Std.	Cat. No.	NEMA Std.	Recept.	Conn.
<A>	30/600	3/5W	H or A		25415		25403	25414
<F>	15/125	1/3W	H	5-15P	5266-C	5-15R	5261	5269-C
<Y>	20/125	1/3W	H	L5-20P	2311	L5-20R	2310	2313
<Z>	30/125	1/3W	H	L5-30P	2611	L5-30R	2610	2613

\* Manufacturer Abbreviations  
 H = Hubbell      A = Arrow-Hart

Note: All connector information is for 60Hz installations only.

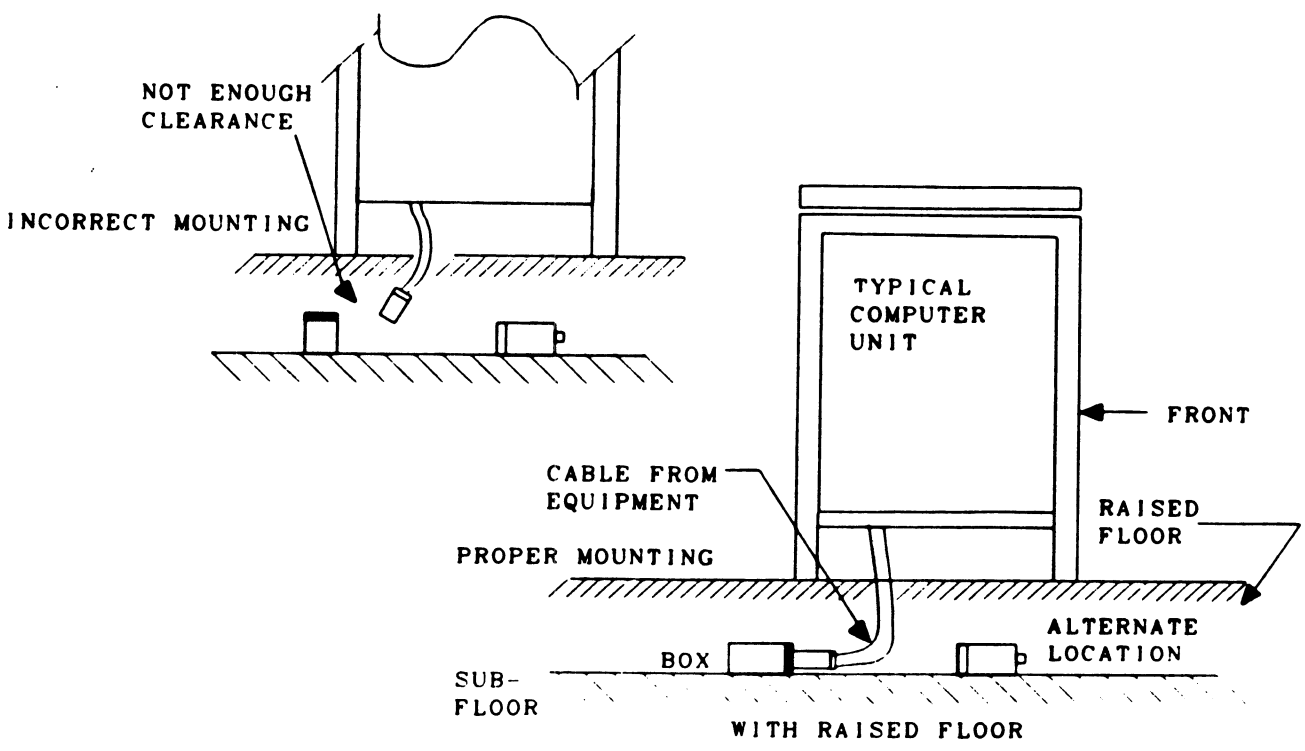


FIGURE 8-3 TYPICAL RECEPTACLE MOUNTING

## SITE PLANNING TEMPLATES

Mylar templates of DPS 8 system equipment are available for site planning purposes. The templates (1/4 inch = 1 foot) may be mounted on floor grid layouts such as HIS 7536, which is an 11" by 17" grid layout and a paper copy is included in this manual. The grid layouts are available in larger sizes and may be ordered when you order the DPS 8 Site Planning Template Kit, Order No. FZ97, from:

Honeywell Information Systems Inc.  
Publications/Computer Supplies Distribution Center  
47 Harvard Street  
Westwood, MA 02090

Attn: Manager, Computer Supplies MA06-01

On the templates, the letter "F" (not circled) indicates the front of the device. The inside bold lines indicate the main portion of the device cabinetry; the outside dashed lines indicate the swing of the doors and/or drawers together with the required clearances for servicing. Clearances may be overlapped. The approximate location of floor cutouts for ac receptacles/connectors (with symbols which are circled), cables and hoses are shown on the template.

The HIS order numbers given on the following paper template sheets correspond to specific mylar template sheets included in the Template Kit, FZ97. Additional copies of the templates in this manual may be reproduced on any office copier as long as the size is not changed.

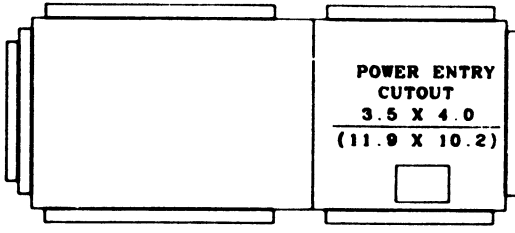
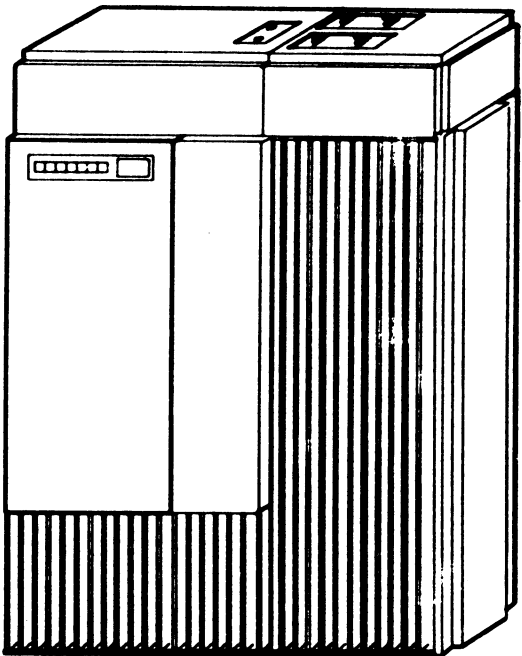
For your convenience, power panel warning labels are provided on a bright adhesive-backed sheet, HIS 3602. Score the surface of the power panel labels around the warning labels desired with a razor-edge type knife, and peel the label off of the backing sheet. Place the appropriate labels on your branch circuit panel where computer room power is isolated from other building power. If the computer room power is isolated at the main power panel, place the labels there and at the computer room panel(s).

## SITE PLANNING TEMPLATES

Model Number	Equipment	Order Number
Level 66/68, DPS 8 Site Planning Template Kit		FZ97
CPU66EA	Central Processor, DPS 8	HIS 7489
CPU66BA, CP6600	Central Processor, Level 66	HIS 7489
CP6100	Central Processor, Level 68	HIS 7489
CPS6650	Dual Central Processor, Level 66	HIS 7491
CPS8802	Dual Central Processor, Level 68	HIS 7491
AMM001, MMM001A	Freestanding Memory	HIS 7496
MCP601A	DPS-C Memory	HIS 7494
CSM601	Integrated Control Unit	HIS 7492
DC8634	Freestanding IOM Unit	HIS 7495
DPUI00A	Diagnostic Processor Unit	HIS 7493
MPU9001	Diagnostic Processor	HIS 7570
CPF6001	Compatibility Mode Option	HIS 7497
CSU6601, CSF6601	System Console	HIS 7498
CSU6004	System Console	HIS 7500
CSU6005	System Control Center	HIS 7499
	Console VIP and Printer	HIS 7538
	Optional Console Workstation	HIS 7539
DCU6201/6202	Communications Base	HIS 7508
DCP6616-DCP6632	Datanet	HIS 7507
DCU66X1	Datanet 66	HIS 7505
DCU8010	Datanet 8	HIS 7505
MSP060X, MTP06XX, URP060X	Peripheral Processor	HIS 7509
MSP0611, MSP0612	Mass Storage Processor	HIS 7487
MTP0611	Magnetic Tape Processor	HIS 7487
MSU0310	Mass Storage Unit	HIS 7510
MSU0400	Mass Storage Unit	HIS 7511
MSU0400	Mass Storage Unit	HIS 7512
MSU0400	Mass Storage Unit	HIS 7513
MSU0402, MSU0451	Mass Storage Unit	HIS 7514
MSU0500, MSU0501	Mass Storage Unit	HIS 7515
MTU0410	Magnetic Tape Unit	HIS 7516
MTU0500	Magnetic Tape Unit	HIS 7517
MTU0600	Magnetic Tape Unit	HIS 7518
MTU0610	Magnetic Tape Unit	HIS 7519
MTU0630	Magnetic Tape Unit	HIS 7520
CRU0501	Card Reader	HIS 7523
CRU1050	Card Reader	HIS 7524
PCU0120	Card Punch	HIS 7521
PCU0121, CCU0401	Card Reader/Punch	HIS 7522
PRU0901, PRU1201	Printer	HIS 7526
PRU1100	Printer	HIS 7525
PRU1200, PRU1600	Printer	HIS 7527

**SITE PLANNING TEMPLATES (CONT).**

Model Number	Equipment	Order Number
DHP0700/0701, DEC600	Document Handler Processor	HIS 7528
DHU0803, DHU0814	Document Handler Unit	HIS 7529
DHU1604-DHU1616	Document Handler Unit	HIS 7530
DHU1620-DHU1632	Document Handler Unit	HIS 7531
PSU0200, PSU0201	Peripheral Switch Unit	HIS 7503
MGC655AB	Motor Generator Control Unit	HIS 7502
MG8030B, MG8031B	Motor Generator	HIS 7502
MG8030C, MG8031C	Motor Generator	HIS 7502
BTF655	Board Tester	HIS 7532
	Junction Frames	HIS 7486
	Computer Room Furniture	HIS 7533
	Computer Room Furniture	HIS 7534
	Floor Grid (11" x 17")	HIS 7536
	Floor Plain (11" x 17")	HIS 7535
	Floor Grid (22" x 17")	HIS 7410
	Floor Plain (22" x 17")	HIS 7411
	Floor Grid (22" x 34")	HIS 7412
	Floor Plain (22" x 34")	HIS 7413
	Power Panel Decals	HIS 3602

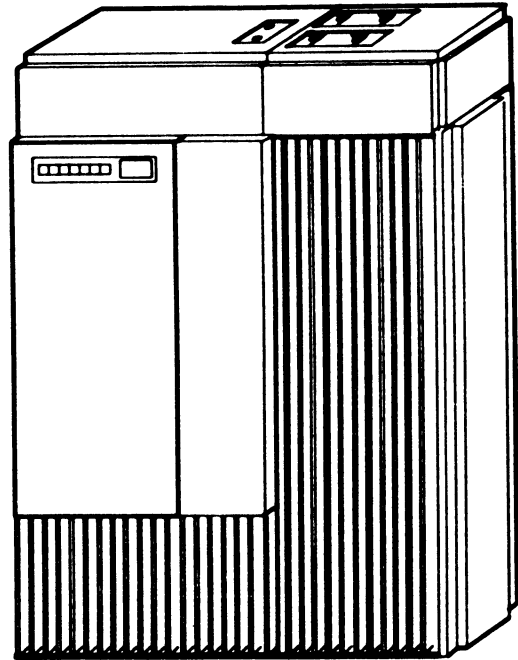
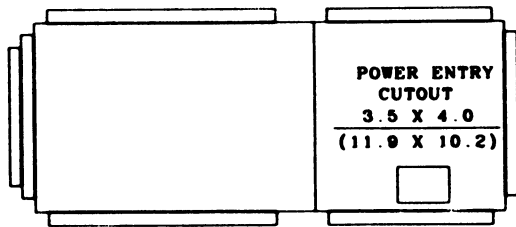
<b>CENTRAL PROCESSOR UNIT --DPS 8--</b>	<b>CPU66EA</b>																														
<p>HIS 7489</p>  <p style="text-align: center;"><b>POWER ENTRY CUTOUT 3.5 X 4.0 (11.9 X 10.2)</b></p> <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>-</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>-</td> </tr> </table>	Front	36(91)	Right	-	Back	30(76)	Left	-	<p>Height 88.6(225)</p>  <p>Width <span style="float: right;">Depth</span> 67.4(171.2) <span style="float: right;">29.3(74.4)</span></p> <p style="text-align: center;">Dimensions: Inches(Centimeters)</p>																						
Front	36(91)	Right	-																												
Back	30(76)	Left	-																												
<p style="text-align: center;"><b>SERVICE WIRING</b></p> <table border="0"> <tr> <td>Volts</td> <td>Hz</td> <td>Circuit Breaker</td> <td>Wiring</td> </tr> <tr> <td>208Y/120</td> <td>60</td> <td>3P20A</td> <td>5/#12</td> </tr> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR conduit connected</b></p> <p style="text-align: center;"><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td>2000(908)</td> <td>1900(863)</td> </tr> </table> <p><b>NOTES:</b></p> <p>1. The shipping height is 76.3(194).</p>	Volts	Hz	Circuit Breaker	Wiring	208Y/120	60	3P20A	5/#12	Shipping	Installed	2000(908)	1900(863)	<p style="text-align: center;"><b>TYPICAL VALUES</b></p> <table border="0"> <tr> <td colspan="3">Amps Per Phase</td> <td>kVA</td> <td>kW</td> <td>kBTU</td> </tr> <tr> <td>A</td> <td>B</td> <td>C</td> <td></td> <td></td> <td>(kcal)</td> </tr> <tr> <td>9.2</td> <td>8.0</td> <td>12.1</td> <td>3.5</td> <td>3.3</td> <td>11.2</td> </tr> </table> <p>AIR IN top</p> <p>AIR OUT front and back</p> <p>DATA CABLES--ft(m) (maximum)</p>	Amps Per Phase			kVA	kW	kBTU	A	B	C			(kcal)	9.2	8.0	12.1	3.5	3.3	11.2
Volts	Hz	Circuit Breaker	Wiring																												
208Y/120	60	3P20A	5/#12																												
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**CENTRAL PROCESSOR  
UNIT --LEVEL 66--**

**CPU66BA, CP6600**

**HIS 7489**

**Height  
88.6(225)**



**REQUIRED CLEARANCE**

Front	36(91)	Right -
Back	30(76)	Left -

**Width** 62(157.5)      **Depth** 29.3(74.4)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

		Circuit	
Volts	Hz	Breaker	Wiring
208Y/120	60	3P30A	5/#10

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
8	7	8	2.8	2.5	8.5

\*Note 1\*

**POWER CABLE--ft(m) & CONNECTOR  
conduit connected**

**AIR IN** top  
**AIR OUT** front and back

**WEIGHT--lb(kg)**

Shipping	Installed
1850(840)	1800(817)

**DATA CABLES--ft(m) (maximum)**

**NOTES:**

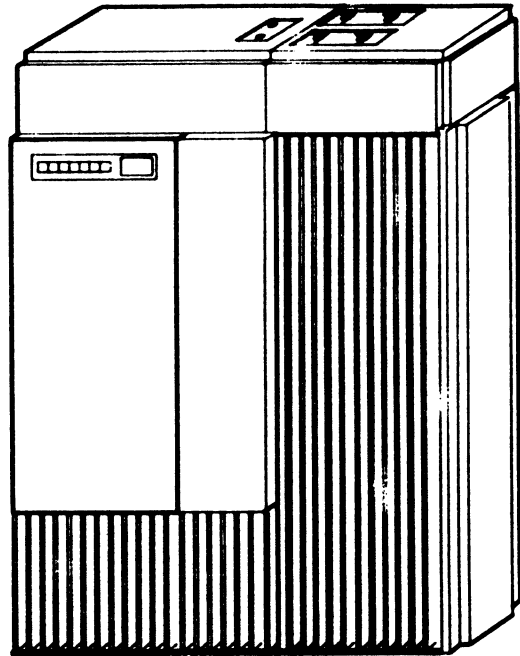
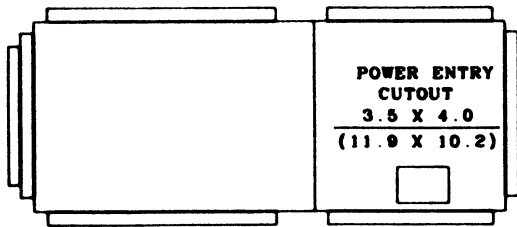
1. The power supply feeds both the CPU and ICU. These typical values are for the CPU only.
2. The shipping height is 76.3(194).

**CENTRAL PROCESSOR  
UNIT --LEVEL 68--**

**CP6100**

**HIS 7489**

**Height  
88.6(225)**



**REQUIRED CLEARANCE**

Front	36(91)	Right	-
Back	30(76)	Left	-

**Width** 62(157.5)      **Depth** 29.3(74.4)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

		Circuit	
Volts	Hz	Breaker	Wiring
208Y/120	60	3P30A	5/#10

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
9.0	9.8	9.8	3.6	3.3	11.5

**POWER CABLE--ft(m) & CONNECTOR  
conduit connected**

**AIR IN top**

**AIR OUT front and back**

**WEIGHT--lb(kg)**

Shipping	Installed
1850(840)	1800(817)

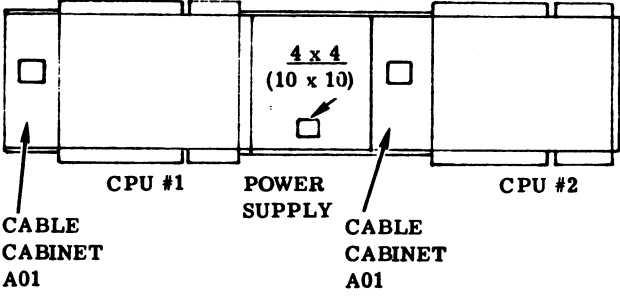
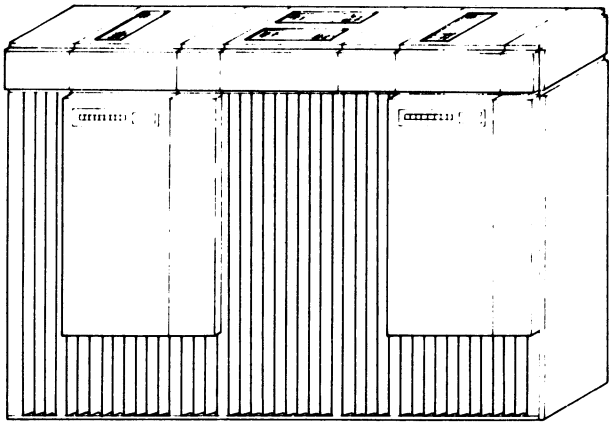
**DATA CABLES--ft(m) (maximum)**

**NOTES:**

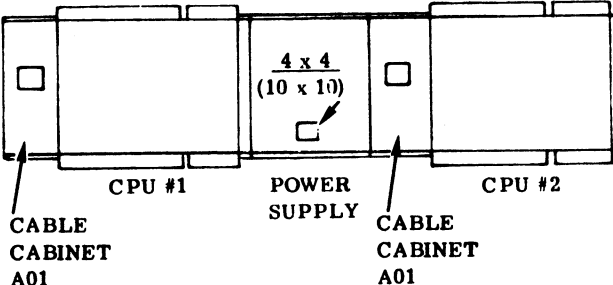
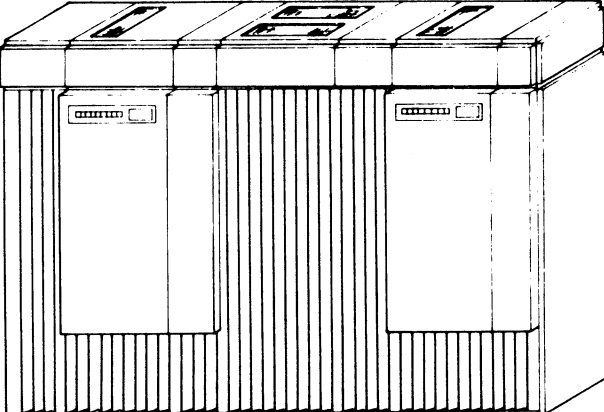
1. The shipping height is 76.3(194).

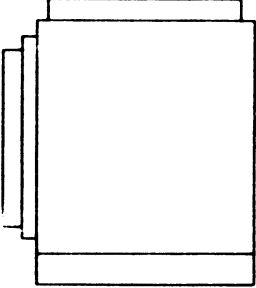
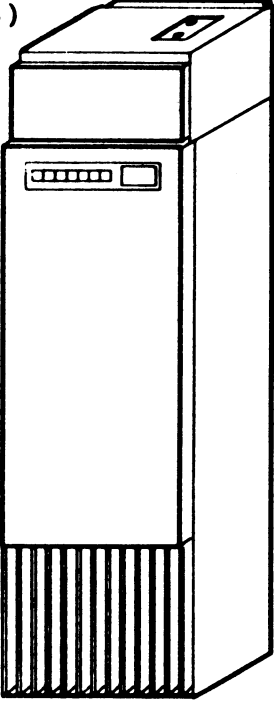


<b>DUAL CENTRAL PROCESSOR</b> --LEVEL 66--	<b>CPS6650</b>
--	----------------

<b>HIS 7491</b>  	<b>Height</b> 88.6(225)    <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>Width</b></td> <td style="width: 50%; text-align: right;"><b>Depth</b></td> </tr> <tr> <td>122(309.9)</td> <td style="text-align: right;">29.3(74.4)</td> </tr> </table> <p style="text-align: center;"><b>Dimensions: Inches(Centimeters)</b></p>	<b>Width</b>	<b>Depth</b>	122(309.9)	29.3(74.4)								
<b>Width</b>	<b>Depth</b>												
122(309.9)	29.3(74.4)												
<table style="width: 100%; border: none;"> <tr> <td colspan="4" style="text-align: center;"><b>REQUIRED CLEARANCE</b></td> </tr> <tr> <td style="width: 25%;">Front</td> <td style="width: 25%;">36(91)</td> <td style="width: 25%;">Right</td> <td style="width: 25%;">-</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>-</td> </tr> </table>	<b>REQUIRED CLEARANCE</b>				Front	36(91)	Right	-	Back	30(76)	Left	-	
<b>REQUIRED CLEARANCE</b>													
Front	36(91)	Right	-										
Back	30(76)	Left	-										

<table style="width: 100%; border: none;"> <tr> <th colspan="4" style="text-align: center;">SERVICE WIRING</th> </tr> <tr> <th style="width: 15%;">Volts</th> <th style="width: 15%;">Hz</th> <th style="width: 15%;">Breaker</th> <th style="width: 15%;">Wiring</th> </tr> <tr> <td>208Y/120</td> <td>60</td> <td>3P30A</td> <td>5/#10</td> </tr> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR conduit connected</b></p> <table style="width: 100%; border: none;"> <tr> <th colspan="2" style="text-align: center;">WEIGHT--lb(kg)</th> </tr> <tr> <td style="width: 50%;">Shipping</td> <td style="width: 50%;">Installed</td> </tr> <tr> <td>2800(1271)</td> <td>2700(1226)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. One power supply feeds both CPU's.</li> <li>2. The shipping height is 76.3(194).</li> <li>3. The unit ships in 5 sections:       <ul style="list-style-type: none"> <li>2 CPUs</li> <li>1 Power Supply</li> <li>2 Cable Cabinets.</li> </ul> </li> </ol>	SERVICE WIRING				Volts	Hz	Breaker	Wiring	208Y/120	60	3P30A	5/#10	WEIGHT--lb(kg)		Shipping	Installed	2800(1271)	2700(1226)	<table style="width: 100%; border: none;"> <tr> <th colspan="6" style="text-align: center;">TYPICAL VALUES</th> </tr> <tr> <th colspan="3" style="text-align: center;">Amps Per Phase</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> <tr> <th style="width: 10%;">A</th> <th style="width: 10%;">B</th> <th style="width: 10%;">C</th> <th style="width: 10%;">kVA</th> <th style="width: 10%;">kW</th> <th style="width: 10%;">kBTU (kcal)</th> </tr> <tr> <td>15.4</td> <td>14.3</td> <td>15.9</td> <td>5.6</td> <td>5.2</td> <td>17.7</td> </tr> </table> <p><b>AIR IN</b>    top</p> <p><b>AIR OUT</b>    front and back</p> <p><b>DATA CABLES--ft(m) (maximum)</b></p>	TYPICAL VALUES						Amps Per Phase						A	B	C	kVA	kW	kBTU (kcal)	15.4	14.3	15.9	5.6	5.2	17.7
SERVICE WIRING																																											
Volts	Hz	Breaker	Wiring																																								
208Y/120	60	3P30A	5/#10																																								
WEIGHT--lb(kg)																																											
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15.4	14.3	15.9	5.6	5.2	17.7																																						

<b>DUAL CENTRAL PROCESSOR</b> <b>--LEVEL 68--</b>	<b>CPS8802</b>																																										
<b>HIS 7491</b>   <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table data-bbox="203 1123 673 1186"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>-</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>-</td> </tr> </table>	Front	36(91)	Right	-	Back	30(76)	Left	-	<b>Height</b> <b>88.6(225)</b>    <table data-bbox="852 1050 1494 1123"> <tr> <td><b>Width</b></td> <td><b>Depth</b></td> </tr> <tr> <td>122(309.9)</td> <td>29.3(74.4)</td> </tr> </table> <p><b>Dimensions: Inches(Centimeters)</b></p>	<b>Width</b>	<b>Depth</b>	122(309.9)	29.3(74.4)																														
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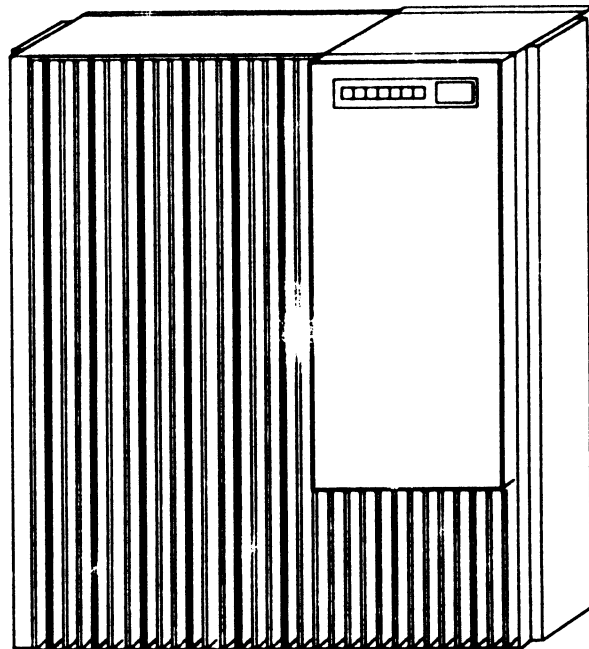
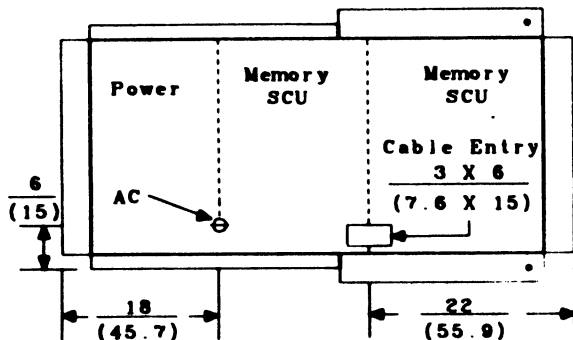
<p><b>FREESTANDING MEMORY/ SYSTEM CONTROL UNIT</b></p>	<p><b>AMM001. MMM001A. MM8044</b></p>																																		
<p><b>HIS 7496</b></p>  <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td><b>Front</b></td> <td><b>36(91)</b></td> <td><b>Right -</b></td> </tr> <tr> <td><b>Back</b></td> <td><b>30(76)</b></td> <td><b>Left -</b></td> </tr> </table>	<b>Front</b>	<b>36(91)</b>	<b>Right -</b>	<b>Back</b>	<b>30(76)</b>	<b>Left -</b>	<p><b>Height</b> 88.6(225)</p>  <p><b>Width</b> 30.6(77.7)      <b>Depth</b> 29.3(74.4)</p> <p><b>Dimensions: Inches(Centimeters)</b></p>																												
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**DPS-C  
MEMORY**

**MCP601A**

**HIS 7494**

**Height  
68(172.7)**



**Width** 62(157.5)      **Depth** 29(73.7)

**REQUIRED CLEARANCE**

Front	36(91)	Right	18(46)
Back	30(76)	Left	18(46)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Breaker	Wiring
208Y/120	60	3P20A	5/#12

**TYPICAL VALUES**

Amps Per Phase			kVA	kW	kBTU (kcal)
A	B	C			
9.0	9.0	9.0	3.2	2.9	9.9

**POWER CABLE--ft(m) & CONNECTOR  
conduit connected**

**AIR IN**

**AIR OUT**

**WEIGHT--lb(kg)**

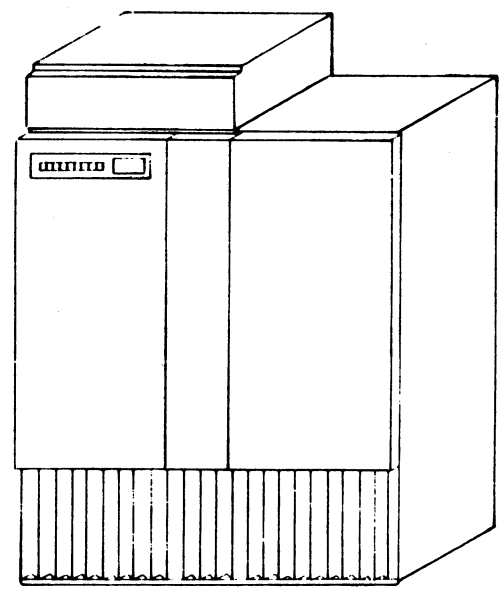
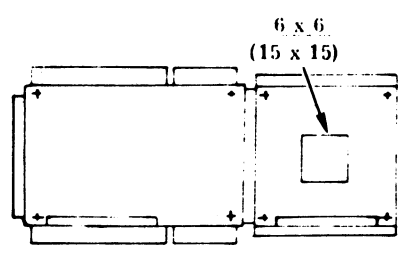
Shipping	Installed
1700(772)	1665(756)

**DATA CABLES--ft(m) (maximum)  
50(15.2)**

**NOTES:**

<b>INTEGRATED CONTROL UNIT</b>	<b>CSM601</b>
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<b>HIS 7492</b>	<b>Height</b> 88.6 (225)
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	<b>REQUIRED CLEARANCE</b>	
Front	36 (91)	Right -
Back	30 (76)	Left -

**Width**  
62 (157.5)

**Depth**  
29.3 (74.4)

**Dimensions: Inches (Centimeters)**

<b>SERVICE WIRING</b>			
	Circuit		
Volts	Hz	Breaker	Wiring
*NOTE 1*			

<b>TYPICAL VALUES</b>						
Amps Per Phase					kBTU	
A	B	C	kVA	kW	(kcal)	
10.3	10.9	9.5	3.7	3.3	11.3	

**POWER CABLE--ft(m) & CONNECTOR**  
NA NA

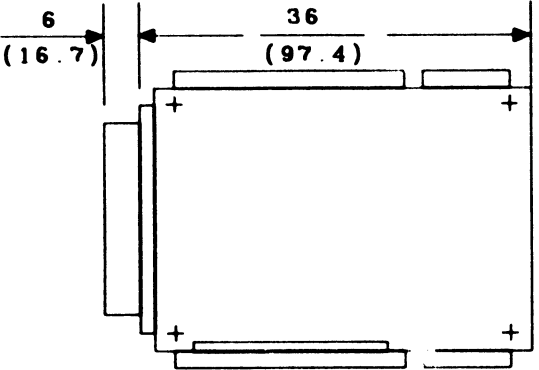
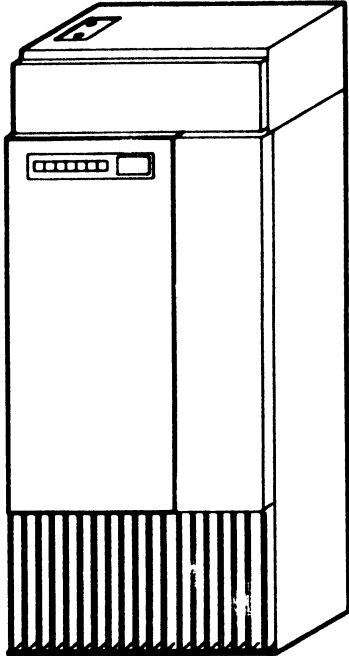
AIR IN top  
AIR OUT front and back

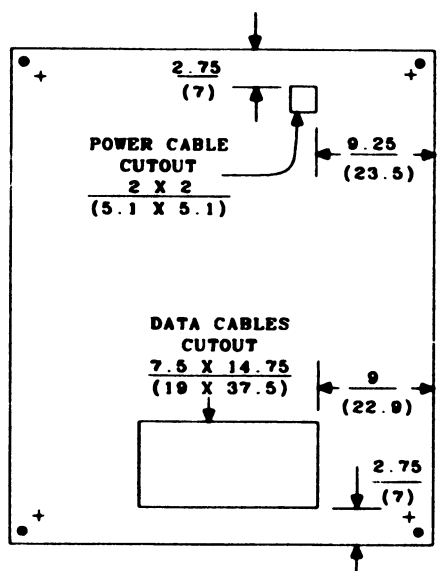
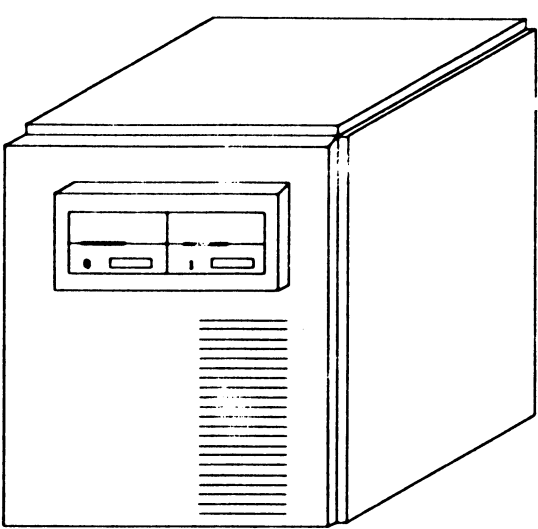
**WEIGHT--lb(kg)**

Shipping 1450 (658)	Installed 1425 (647)
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**DATA CABLES--ft(m) (maximum)**

- NOTES:**
1. This unit receives power from additional regulators mounted in the CPU66BA or CP6600 power supply. These values are for the ICU load only.

<b>FREESTANDING IOM UNIT</b>	<b>DC8634</b>																														
<p>HIS 7495</p>  <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right -</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left -</td> </tr> </table>	Front	36(91)	Right -	Back	30(76)	Left -	<p>Height 88.6(225)</p>  <p>Width 42.6(108.2)</p> <p>Depth 29.3(74.4)</p> <p>Dimensions: Inches(Centimeters)</p>																								
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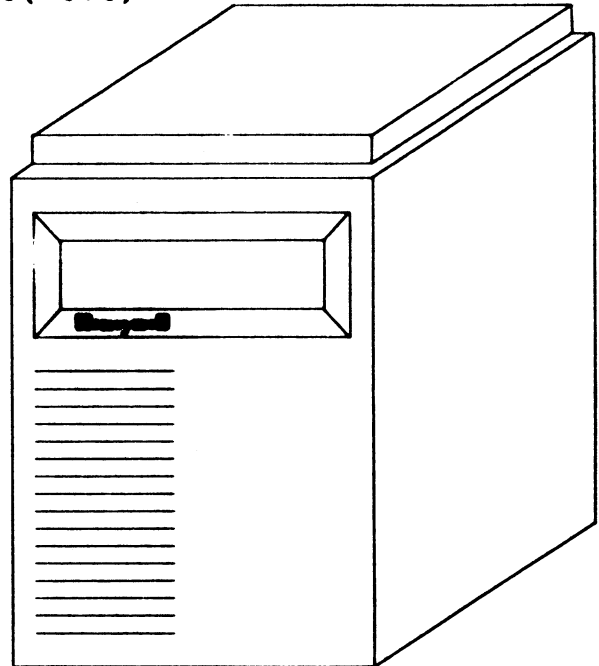
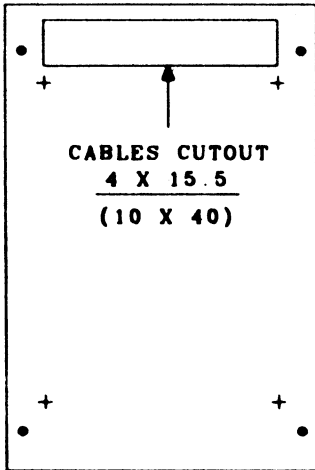
<b>DIAGNOSTIC PROCESSOR UNIT</b>	<b>DPU100A</b>																																																																
<b>HIS 7493</b>    <table border="0"> <tr> <td colspan="4" style="text-align: center;"><b>REQUIRED CLEARANCE</b></td> </tr> <tr> <td style="text-align: right;">Front</td> <td style="text-align: center;">30(76)</td> <td style="text-align: center;">Right</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: right;">Back</td> <td style="text-align: center;">30(76)</td> <td style="text-align: center;">Left</td> <td style="text-align: center;">0</td> </tr> </table>	<b>REQUIRED CLEARANCE</b>				Front	30(76)	Right	0	Back	30(76)	Left	0	<b>Height</b> <b>39.4(100)</b>    <table border="0"> <tr> <td style="text-align: right;"><b>Width</b></td> <td style="text-align: center;">32.8(83.2)</td> <td style="text-align: right;"><b>Depth</b></td> <td style="text-align: center;">33(83.8)</td> </tr> </table> <p style="text-align: center;"><b>Dimensions: Inches(Centimeters)</b></p>	<b>Width</b>	32.8(83.2)	<b>Depth</b>	33(83.8)																																																
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**DIAGNOSTIC  
PROCESSOR UNIT**

**MPU9001. (MPU9001B)**

**HIS 7570**

**Height  
30(76.2)**



REQUIRED CLEARANCE			
Front	36(91)	Right	0
Back	30(76)	Left	0

**Width** 20.5(51.1)      **Depth** 33(83.8)

**Dimensions: Inches(Centimeters)**

SERVICE WIRING			
Volts	Hz	Circuit Breaker	Wiring
120	60	1P15A	3/#14
220	50	1P10A	3/1.6mm

TYPICAL VALUES					
Amps Per Phase			kVA	kW	kBTU
A	B	C			(kcal)
7.9	-	-	.95	.69	2.37
4.3	-	-	.95	.69	(594)

**POWER CABLE--ft(m) & CONNECTOR**  
6(1.8)      <F>

**AIR IN** front

**AIR OUT** rear

**WEIGHT--lb(kg)**  
Shipping      Installed  
326(148)      326(148)

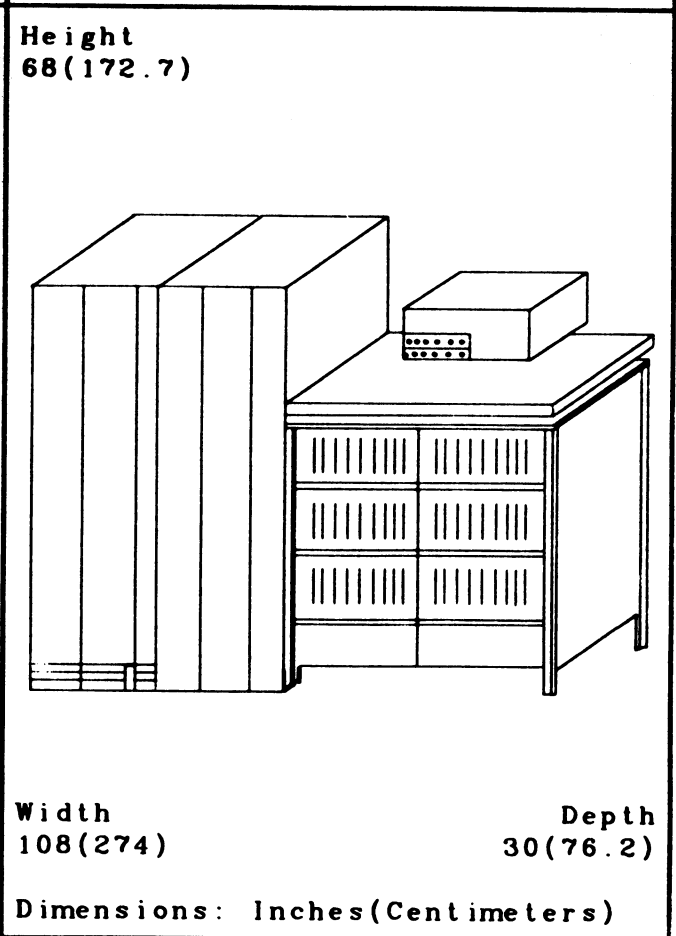
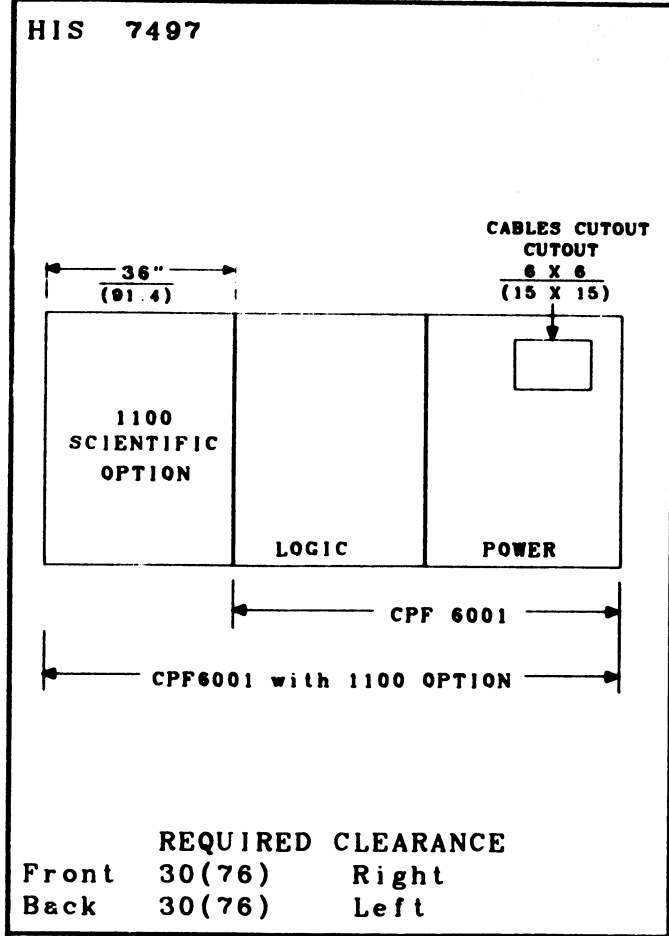
**DATA CABLES--ft(m) (maximum)**  
50(15.2) EIA

**NOTES:**

1. This unit is the replacement for the DPU100A.
2. The information shown includes the VIP7205. (VIP7255).
3. The VIP, the Data Set and the telephone may be placed on top of the unit.



<b>COMPATIBILITY MODE OPTION</b>	<b>CPF6001</b>
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<b>SERVICE WIRING</b>			
	Circuit		
Volts	Hz	Breaker	Wiring
208Y/120	60	3P30A	5/#10

**POWER CABLE--ft(m) & CONNECTOR <A>**

<b>WEIGHT--lb(kg)</b>	
Shipping	Installed
	2860(1298)

**NOTES:**

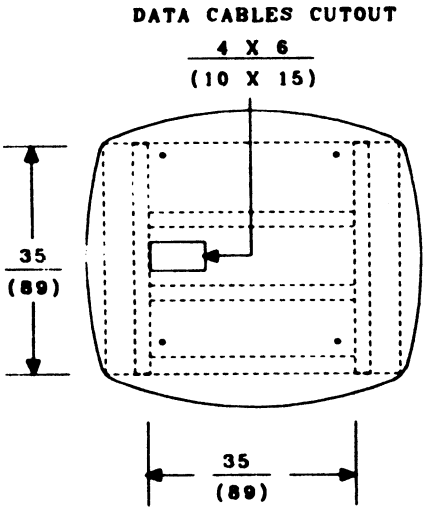
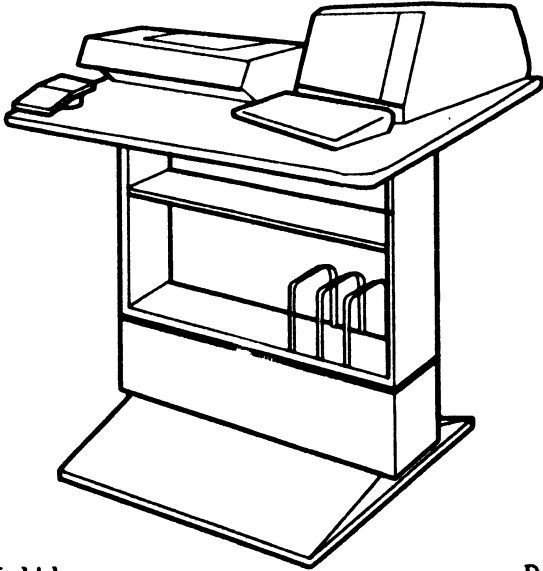
- The unit ships in three sections.

<b>TYPICAL VALUES</b>						
<b>Amps Per Phase</b>						
A	B	C	kVA	kW	kBTU (kcal)	
14.0	19.0	18.0	6.1	5.8	20.0	

**AIR IN**

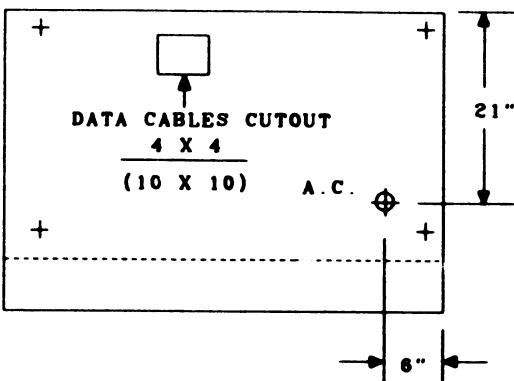
**AIR OUT**

**DATA CABLES--ft(m) (maximum)**  
50(15.2) to 10 unit

<b>SYSTEM CONSOLE</b>	<b>CSU6601. CSF6601</b>																																								
<p><b>HIS 7498</b></p> <p style="text-align: center;"><b>DATA CABLES CUTOUT</b> 4 X 6 (10 X 15)</p>  <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>30(76)</td> <td>Right</td> <td>6(15)</td> </tr> <tr> <td>Back</td> <td>20(50)</td> <td>Left</td> <td>6(15)</td> </tr> </table>	Front	30(76)	Right	6(15)	Back	20(50)	Left	6(15)	<p><b>Height</b> 39.4(100)</p>  <p><b>Width</b> 51(132)      <b>Depth</b> 39(99)</p> <p><b>Dimensions: Inches(Centimeters)</b></p>																																
Front	30(76)	Right	6(15)																																						
Back	20(50)	Left	6(15)																																						
<p style="text-align: center;"><b>SERVICE WIRING</b></p> <table border="0"> <thead> <tr> <th>Volts</th> <th>Hz</th> <th>Circuit Breaker</th> <th>Wiring</th> </tr> </thead> <tbody> <tr> <td>120</td> <td>60</td> <td>1P15A</td> <td>3/#14</td> </tr> <tr> <td>220</td> <td>50</td> <td>1P10A</td> <td>3/1.6mm</td> </tr> </tbody> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> on devices      &lt;F&gt;</p> <p style="text-align: center;"><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td><b>Shipping</b></td> <td><b>Installed</b></td> </tr> <tr> <td>225(102)</td> <td>200(91)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>Provide a duplex receptacle above or below the floor for the connection of the power cords from the devices mounted on the console.</li> </ol>	Volts	Hz	Circuit Breaker	Wiring	120	60	1P15A	3/#14	220	50	1P10A	3/1.6mm	<b>Shipping</b>	<b>Installed</b>	225(102)	200(91)	<p style="text-align: center;"><b>TYPICAL VALUES</b></p> <table border="0"> <thead> <tr> <th colspan="3">Amps Per Phase</th> <th colspan="2"></th> <th>kBTU</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>kVA</th> <th>kW</th> <th>(kcal)</th> </tr> </thead> <tbody> <tr> <td>6.0</td> <td>-</td> <td>-</td> <td>0.8</td> <td>0.6</td> <td>2.0</td> </tr> <tr> <td>3.3</td> <td>-</td> <td>-</td> <td>0.8</td> <td>0.6</td> <td>(516)</td> </tr> </tbody> </table> <p><b>AIR IN</b>    NA</p> <p><b>AIR OUT</b>    NA</p> <p><b>DATA CABLES--ft(m) (maximum)</b></p> <p>50(15.2) EIA standard</p> <p>150(45.7) EIA optional</p>	Amps Per Phase					kBTU	A	B	C	kVA	kW	(kcal)	6.0	-	-	0.8	0.6	2.0	3.3	-	-	0.8	0.6	(516)
Volts	Hz	Circuit Breaker	Wiring																																						
120	60	1P15A	3/#14																																						
220	50	1P10A	3/1.6mm																																						
<b>Shipping</b>	<b>Installed</b>																																								
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Amps Per Phase					kBTU																																				
A	B	C	kVA	kW	(kcal)																																				
6.0	-	-	0.8	0.6	2.0																																				
3.3	-	-	0.8	0.6	(516)																																				

<b>SYSTEM CONSOLE</b>	<b>CSU6004</b>
---------------------------	----------------

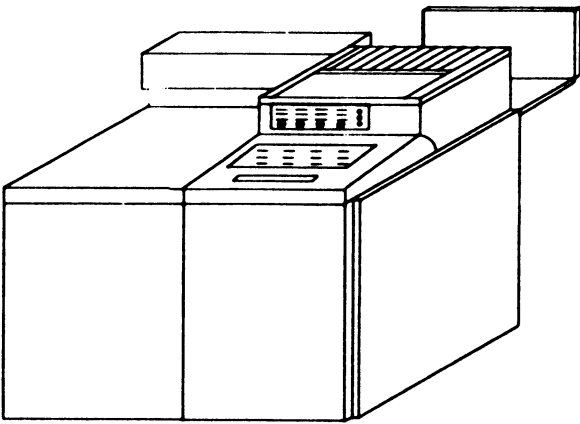
**HIS 7500**



**REQUIRED CLEARANCE**

	Front 36(91)	Right 0	
	Back 36(91)	Left 0	

**Height**  
49(124.5)



**Width** 55(139.7)                      **Depth** 36.4(92.5)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

	Circuit		
<b>Volts</b>	<b>Hz</b>	<b>Breaker</b>	<b>Wiring</b>
208Y/120	60	3P15A	5/#14

**POWER CABLE--ft(m) & CONNECTOR**  
conduit connected

**WEIGHT--lb(kg)**

<b>Shipping</b>	<b>Installed</b>
550(250)	520(236)

**NOTES:**

**TYPICAL VALUES**

<b>Amps Per Phase</b>					<b>kBTU</b>
A	B	C	kVA	kW	(kcal)
0.5	1.0	1.2	0.3	0.2	0.7

**AIR IN**    NA

**AIR OUT**    NA

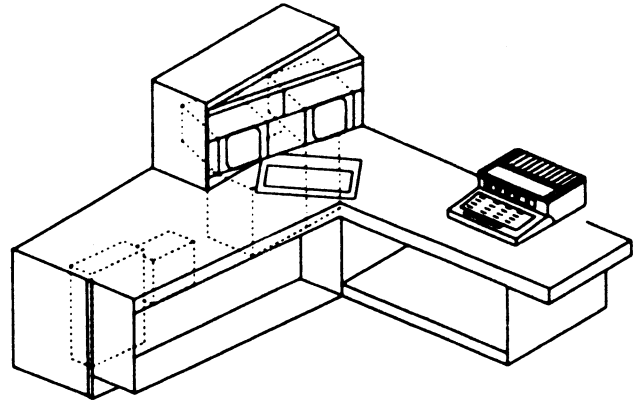
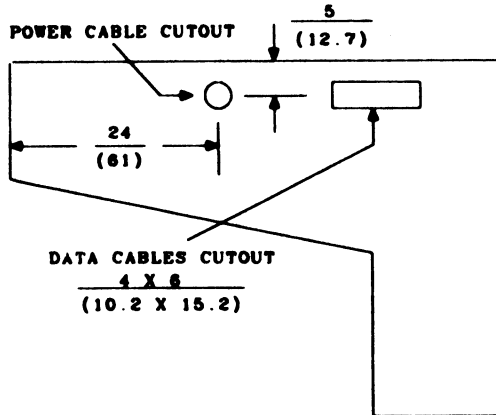
**DATA CABLES--ft(m) (maximum)**  
75(22.8)

**SYSTEM  
CONTROL CENTER**

**CSU6005**

**HIS 7499**

**Height  
60(152.4)**



**REQUIRED CLEARANCE**

Front	36(91)	Right	30(76)
Back	30(76)	Left	0

**Width** 96.5(245.1)      **Depth** 77(195.6)  
**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

		<b>Circuit</b>	
<b>Volts</b>	<b>Hz</b>	<b>Breaker</b>	<b>Wiring</b>
208Y/120	60	3P15A	5/#14

**TYPICAL VALUES**

<b>Amps Per Phase</b>					<b>kBTU</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>kVA</b>	<b>kW</b>	<b>(kcal)</b>
2.6	2.6	2.6	0.9	0.8	2.8

**POWER CABLE--ft(m) & CONNECTOR  
conduit connected**

**AIR IN rear**

**AIR OUT rear**

**WEIGHT--lb(kg)**

<b>Shipping</b>	<b>Installed</b>
1000(454)	850(386)

**DATA CABLES--ft(m) (maximum)  
75(22.8)**

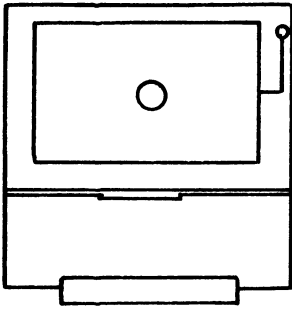
**NOTES:**

1. The unit ships in 3 sections.

**OPTIONAL CONSOLE  
WORKSTATION COMPONENTS**

**REFER TO NOTE 1**

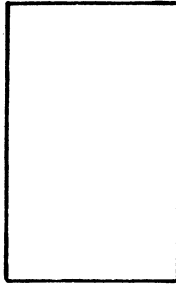
1.6



**1. M7013**  
Terminal Workstation  
Desk with adjustable  
Keyboard Plate and  
Movable Top

29.5(75) Wide  
29.5(75) Depth  
29.5(75) Height

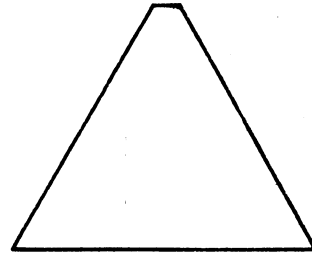
2



**2. M7014**  
Rectangular Side  
Extension  
Right or Left side  
mounting

17.7(45) Wide  
29.5(75) Depth

3



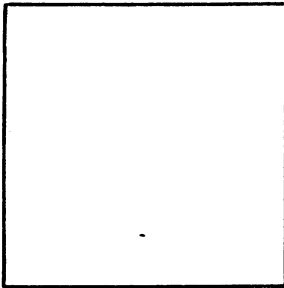
**3. M7015**  
60 degree Side  
Wing

31.7(80.5) Wide  
29.5(75) Sides

**6. M7019**

15 degree Tilt  
Mechanism for Video  
Display Unit

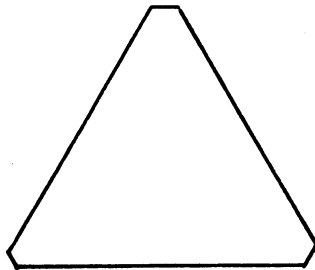
4



**4. M7017**  
Square Extension or  
Center

29.5(75) Wide  
29.5(75) Depth

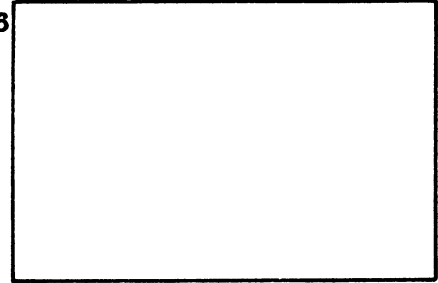
5



**5. M7018**  
Triangular Center  
Piece

29.5(75) Sides

6



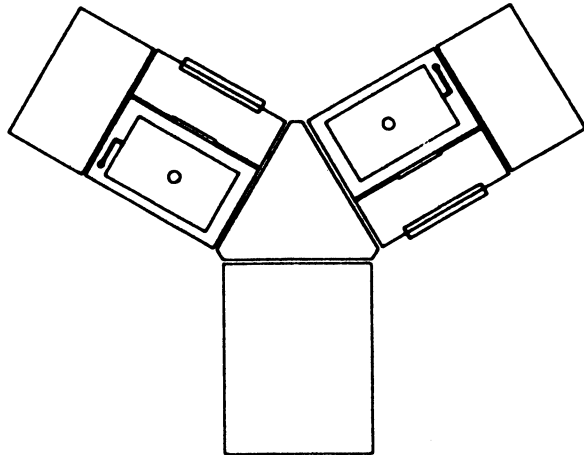
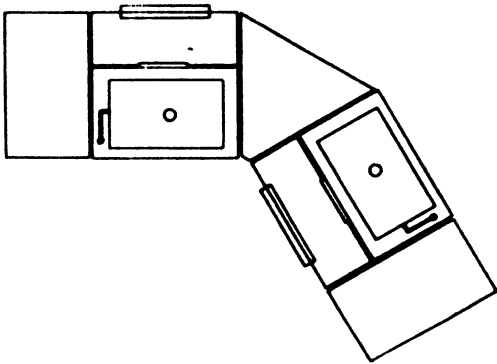
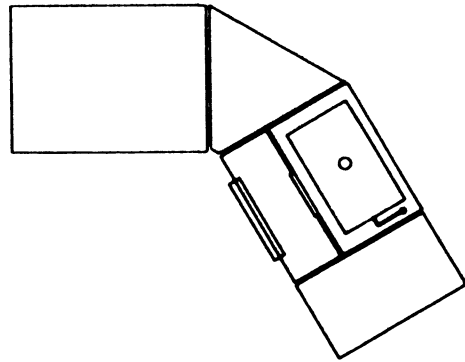
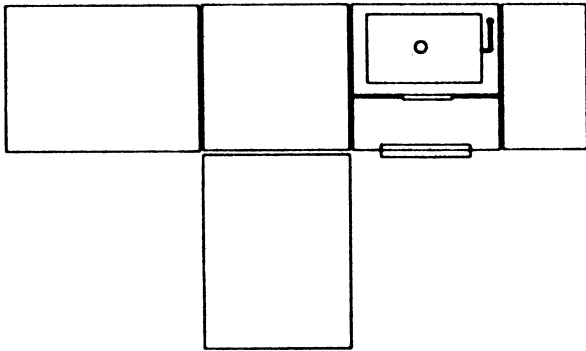
**7. M7031**  
Workstation Desk

44.5(113) Width  
29.5(75) Depth  
29.5(75) Height

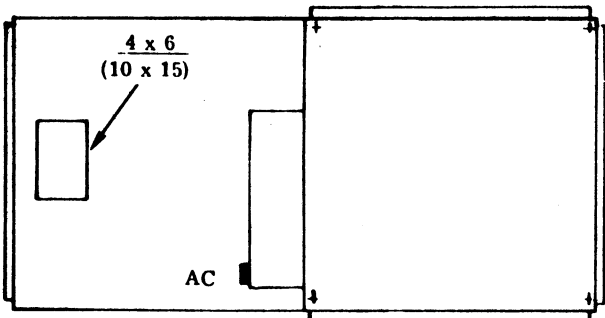
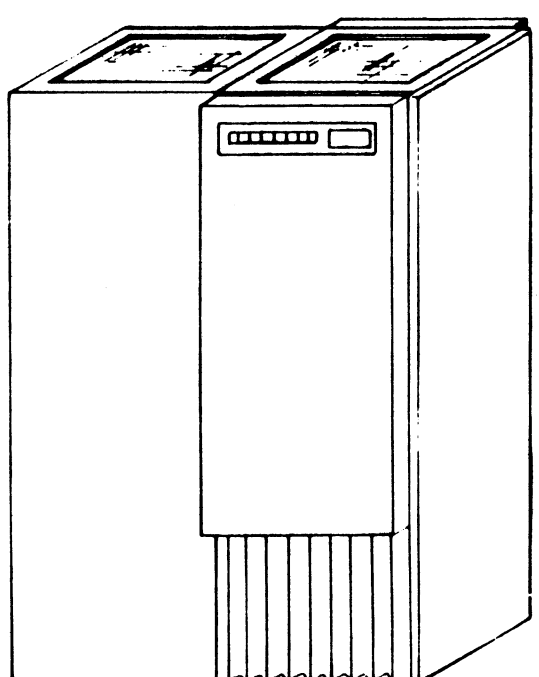
**NOTES:**

1. Order via CUSTOMER'S SUPPLIES ORDER FORM in the Honeywell Computer Supply Catalog, BY62.
2. Dimensions: Inches(Centimeters)

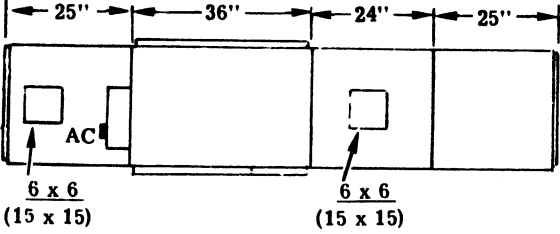
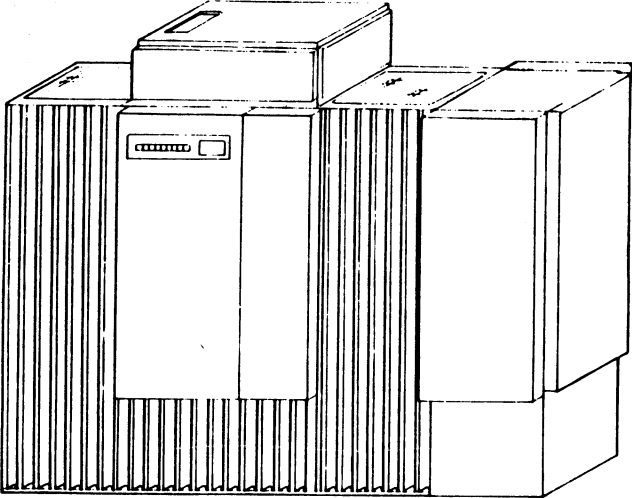
**OPTIONAL CONSOLE  
WORKSTATION CONFIGURATIONS**

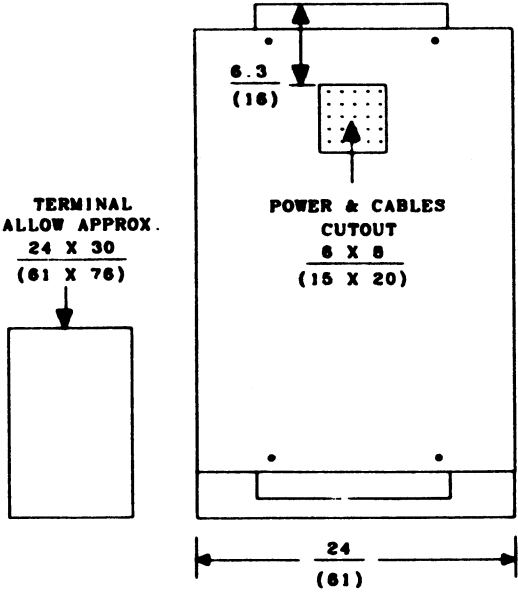
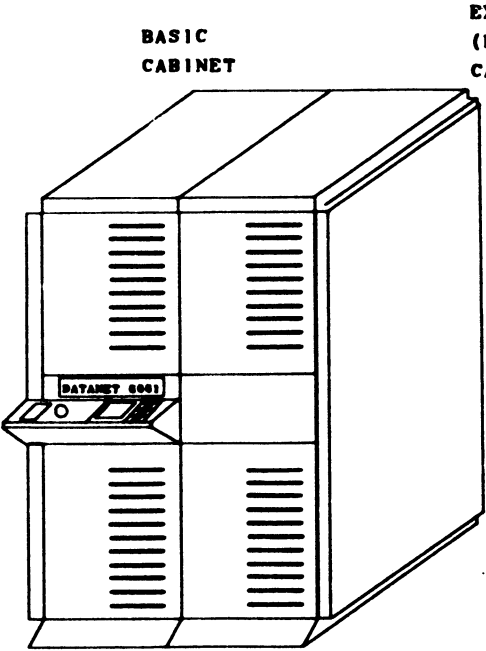




<b>COMMUNICATIONS BASE</b>	DCU6201, DCU6202																														
<p><b>HIS 7508</b></p>  <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>-</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>-</td> </tr> </table>	Front	36(91)	Right	-	Back	30(76)	Left	-	<p><b>Height</b> 76.3(193.8)</p>  <p style="text-align: center;"><b>Width</b> <span style="float: right;"><b>Depth</b></span> 50(127) <span style="float: right;">28(71.1)</span></p> <p style="text-align: center;"><b>Dimensions: Inches(Centimeters)</b></p>																						
Front	36(91)	Right	-																												
Back	30(76)	Left	-																												
<p style="text-align: center;"><b>SERVICE WIRING</b></p> <table border="0"> <thead> <tr> <th>Volts</th> <th>Hz</th> <th>Circuit Breaker</th> <th>Wiring</th> </tr> </thead> <tbody> <tr> <td>208Y/120</td> <td>60</td> <td>3P15A</td> <td>5/#14</td> </tr> </tbody> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> conduit connected</p> <p style="text-align: center;"><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td>900(409)</td> <td>850(386)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>The unit ships in 2 sections.</li> <li>The unit's AC power is from the MG set.</li> </ol>	Volts	Hz	Circuit Breaker	Wiring	208Y/120	60	3P15A	5/#14	Shipping	Installed	900(409)	850(386)	<p style="text-align: center;"><b>TYPICAL VALUES</b></p> <table border="0"> <thead> <tr> <th colspan="3">Amps Per Phase</th> <th>kVA</th> <th>kW</th> <th>kBTU</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th></th> <th></th> <th>(kcal)</th> </tr> </thead> <tbody> <tr> <td>1.3</td> <td>2.1</td> <td>0.8</td> <td>0.5</td> <td>0.4</td> <td>1.4</td> </tr> </tbody> </table> <p><b>AIR IN</b> lower front</p> <p><b>AIR OUT</b> top</p> <p><b>DATA CABLES--ft(m) (maximum)</b> 50(15.2)</p>	Amps Per Phase			kVA	kW	kBTU	A	B	C			(kcal)	1.3	2.1	0.8	0.5	0.4	1.4
Volts	Hz	Circuit Breaker	Wiring																												
208Y/120	60	3P15A	5/#14																												
Shipping	Installed																														
900(409)	850(386)																														
Amps Per Phase			kVA	kW	kBTU																										
A	B	C			(kcal)																										
1.3	2.1	0.8	0.5	0.4	1.4																										



<b>DATANET</b>	<b>DCP6616. DCP6624. DCP6632</b>																														
<p><b>HIS 7507</b></p>  <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>-</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>-</td> </tr> </table>	Front	36(91)	Right	-	Back	30(76)	Left	-	<p><b>Height</b> 88.6(225)</p>  <p><b>Width</b> 110(279.4)</p> <p><b>Depth</b> 29(73.7)</p> <p><b>Dimensions: Inches(Centimeters)</b></p>																						
Front	36(91)	Right	-																												
Back	30(76)	Left	-																												
<p><b>SERVICE WIRING</b></p> <table border="0"> <tr> <td>Volts</td> <td>Hz</td> <td>Circuit Breaker</td> <td>Wiring</td> </tr> <tr> <td>208Y/120</td> <td>60</td> <td>3P:5A</td> <td>5/#14</td> </tr> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> conduit connected</p> <p><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td>2100(953)</td> <td>2000(908)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. The shipping height is 76.3(194)</li> <li>2. The unit ships in 4 sections.</li> <li>3. The unit's AC power is from the MG set.</li> </ol>	Volts	Hz	Circuit Breaker	Wiring	208Y/120	60	3P:5A	5/#14	Shipping	Installed	2100(953)	2000(908)	<p><b>TYPICAL VALUES</b></p> <table border="0"> <tr> <td colspan="3"><b>Amps Per Phase</b></td> <td colspan="3"><b>kBTU</b></td> </tr> <tr> <td>A</td> <td>B</td> <td>C</td> <td>kVA</td> <td>kW</td> <td>(kcal)</td> </tr> <tr> <td>7.8</td> <td>6.8</td> <td>6.3</td> <td>2.4</td> <td>2.1</td> <td>7.2</td> </tr> </table> <p><b>AIR IN</b> top</p> <p><b>AIR OUT</b> front and back</p> <p><b>DATA CABLES--ft(m) (maximum)</b> 70(21)</p>	<b>Amps Per Phase</b>			<b>kBTU</b>			A	B	C	kVA	kW	(kcal)	7.8	6.8	6.3	2.4	2.1	7.2
Volts	Hz	Circuit Breaker	Wiring																												
208Y/120	60	3P:5A	5/#14																												
Shipping	Installed																														
2100(953)	2000(908)																														
<b>Amps Per Phase</b>			<b>kBTU</b>																												
A	B	C	kVA	kW	(kcal)																										
7.8	6.8	6.3	2.4	2.1	7.2																										

<b>DATANET 66</b>	<b>DCU6661</b>																														
<p><b>HIS 7505</b></p>  <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>0</td> </tr> </table>	Front	36(91)	Right	0	Back	30(76)	Left	0	<p><b>Height</b> 62(157.5)</p>  <p><b>Width</b> 24(61) per cabinet      <b>Depth</b> 36.1(91.7)</p> <p><b>Dimensions: Inches(Centimeters)</b></p>																						
Front	36(91)	Right	0																												
Back	30(76)	Left	0																												
<p><b>SERVICE WIRING</b></p> <table border="0"> <tr> <td>Volts</td> <td>Hz</td> <td>Breaker</td> <td>Wiring</td> </tr> <tr> <td>208Y/120</td> <td>60</td> <td>3P30A</td> <td>5/#10</td> </tr> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> 6(1.8)      &lt;A&gt;</p> <p><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td></td> <td>900(409)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>The expansion cabinet is necessary for over 64 lines. Duplicate the floor cutout for the expansion cabinet.</li> <li>Amps Per Phase vary 5A to 20A, according to options.</li> <li>The terminal requires 120V 15A service.</li> </ol>	Volts	Hz	Breaker	Wiring	208Y/120	60	3P30A	5/#10	Shipping	Installed		900(409)	<p><b>TYPICAL VALUES</b></p> <table border="0"> <tr> <td colspan="3"><b>Amps Per Phase</b></td> <td colspan="2"></td> <td><b>kBTU</b></td> </tr> <tr> <td>A</td> <td>B</td> <td>C</td> <td>kVA</td> <td>kW</td> <td>(kcal)</td> </tr> <tr> <td>20</td> <td>20</td> <td>20</td> <td>7.8</td> <td>4.9</td> <td>16.6</td> </tr> </table> <p>*Note 2*</p> <p><b>AIR IN</b> front</p> <p><b>AIR OUT</b> rear</p> <p><b>DATA CABLES--ft(m) (maximum)</b> 75(22.8) to 10 unit 50(15.2) to Modems</p>	<b>Amps Per Phase</b>					<b>kBTU</b>	A	B	C	kVA	kW	(kcal)	20	20	20	7.8	4.9	16.6
Volts	Hz	Breaker	Wiring																												
208Y/120	60	3P30A	5/#10																												
Shipping	Installed																														
	900(409)																														
<b>Amps Per Phase</b>					<b>kBTU</b>																										
A	B	C	kVA	kW	(kcal)																										
20	20	20	7.8	4.9	16.6																										

DATANET 8

DCU8010. (DCU8010B)

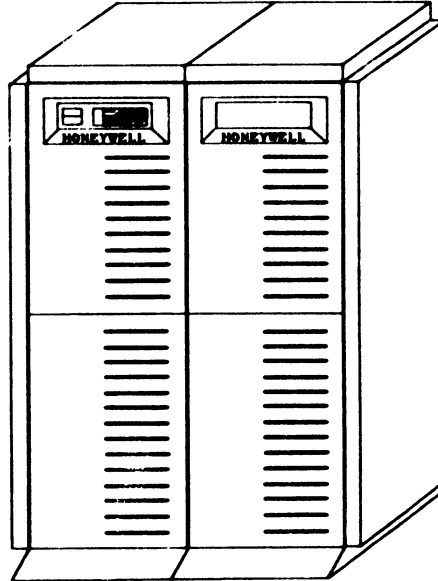
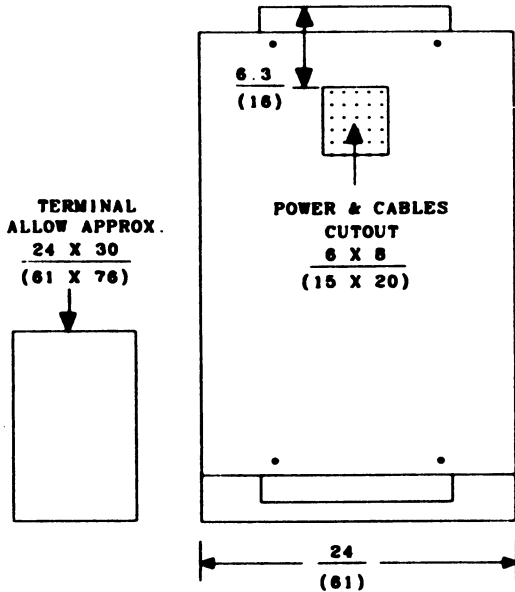
HIS 7505

Height  
61.5(156.2)

BASIC  
CABINET

EXPANSION  
(BULKHEAD)  
CABINET

\*NOTE 1\*



Width 27(68.6) \*Note 2\*      Depth 36.1(91.7)

Dimensions: Inches(Centimeters)

REQUIRED CLEARANCE  
Front 36(91)      Right 0  
Back 30(76)      Left 0

SERVICE WIRING  
Circuit

Volts	Hz	Breaker	Wiring
208Y/120	60	2P30A	4/#10
220	50	1P30A	3/2.5mm

POWER CABLE--ft(m) & CONNECTOR  
6(1.8)      <A>

WEIGHT--lb(kg)

Shipping      Installed  
550(250)

TYPICAL VALUES

Amps Per Phase			kVA	kW	kBTU (kcal)
A	B	C			
23	23	-	5.5	3.5	11.9
25	-	-	5.5	3.5	(3012)

\*Note 3\*

AIR IN front

AIR OUT rear

DATA CABLES--ft(m) (maximum)  
75(22.8) to IO unit  
50(15.2) to Modems

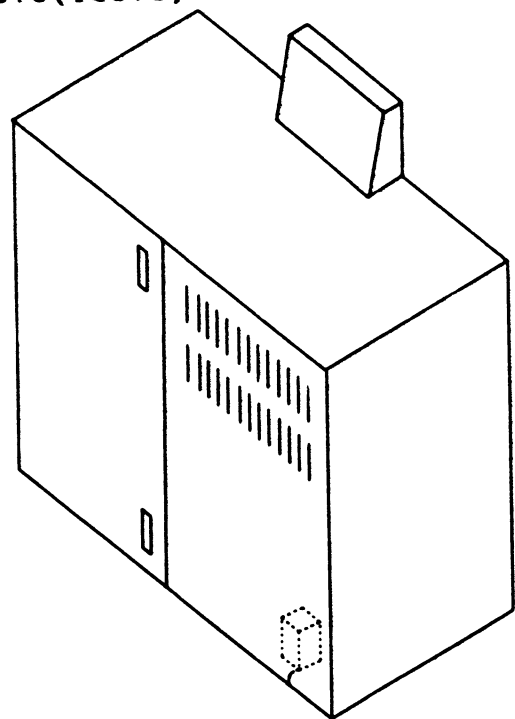
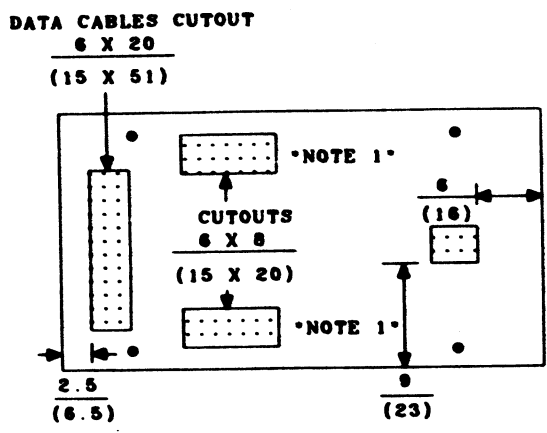
NOTES:

1. The expansion cabinet is necessary for over 64 lines. Duplicate the floor cutout for the expansion cabinet.
2. For a dual cabinet the Width is 51(129.5).
3. Amps Per Phase vary up to values shown according to options.
4. The terminal requires a convenience power outlet.

<b>PERIPHERAL PROCESSOR</b>	<b>MSP060X, MTP06XX, URPO60X</b>
-----------------------------	----------------------------------

**HIS 7509**

**Height**  
50.5(128.3)



**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

**Width** 55(139.7)      **Depth** 28(71.1)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Circuit			
Volts	Hz	Breaker	Wiring
208Y/120	60	3P15A	5/#14

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
5.2	4.0	5.4	1.8	1.6	5.5

**POWER CABLE--ft(m) & CONNECTOR**  
conduit connected

**AIR IN** front  
**AIR OUT** rear

**WEIGHT--lb(kg)**

Shipping	Installed
735(329)	700(318)

**DATA CABLES--ft(m) (maximum)**  
75(22.8) to IO unit  
75(22.8) to peripherals

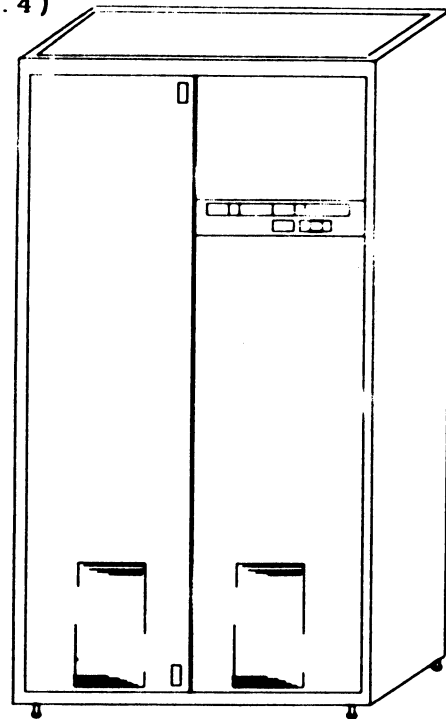
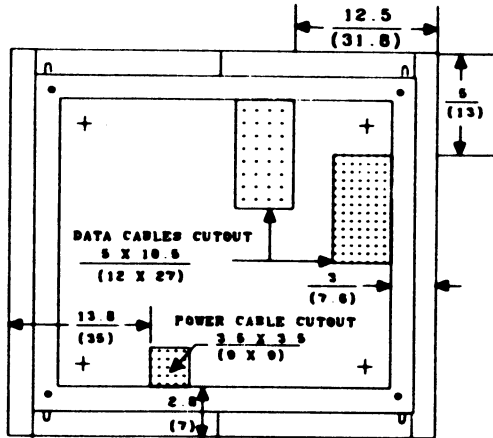
- NOTES:**
1. Data cable cutouts for the dual channel disk option.

**MASS STORAGE  
PROCESSOR**

MSP0611, MSP0612

HIS 7487

Height  
73(185.4)



Width 40.6(103) Depth 32.5(82.6)

**REQUIRED CLEARANCE**  
Front 36(91) Right 0  
Back 30(76) Left 0

Dimensions: Inches(Centimeters)

**SERVICE WIRING**

Volts	Hz	Circuit Breaker	Wiring
208	60	3P15A	4/#14
208	50	3P15A	4/1.6mm

\*Note 2\*

POWER CABLE--ft(m) & CONNECTOR  
conduit connected

**WEIGHT--lb(kg)**

Shipping	Installed
	1062(482)

**TYPICAL VALUES**

Amps Per Phase			kVA		kW		kBTU
A	B	C					(kcal)
7.2	6.7	5.6	2.4	2.1			7.2
6.4	6.3	5.6	2.2	1.9			(1656)

AIR IN lower front, lower rear

AIR OUT top, side panels

DATA CABLES--ft(m) (maximum)

75(22.8) to 10 unit

75(22.8) to peripherals \*Note 3\*

**NOTES:**

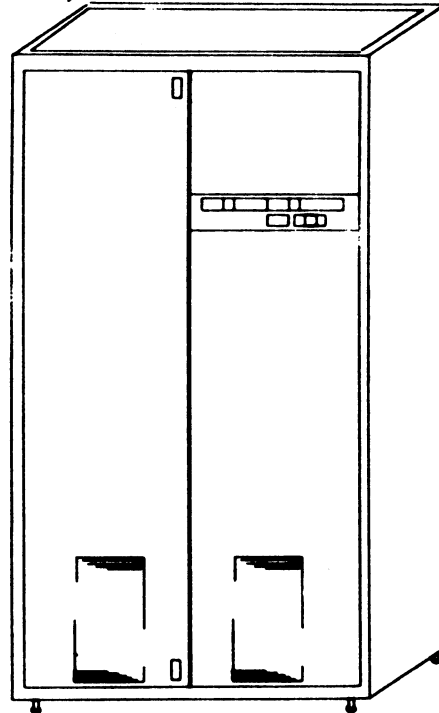
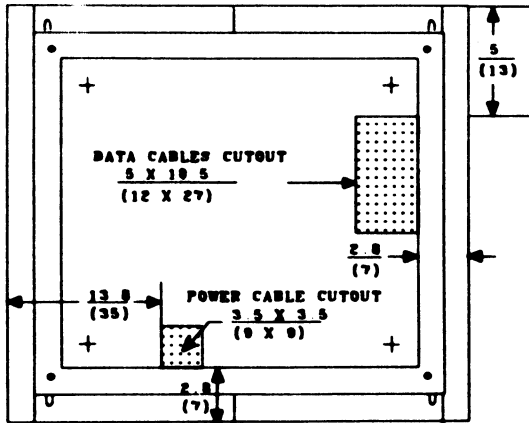
1. Frames of adjacent controllers may be bolted together. If so, adjacent side panels are to be removed. Deduct 1.3(3.3) for each panel removed.
2. Neutral is not used.
3. To the MSU0400, see the Notes for the device.

**MAGNETIC  
TAPE PROCESSOR**

**MTP0611**

**HIS 7487**

**Height  
73(185.4)**



**REQUIRED CLEARANCE**  
 Front 36(91)      Right 0  
 Back 30(76)      Left 0

**Width** 40.6(103)      **Depth** 32.5(82.6)  
**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Circuit Breaker	Wiring
208	60	3P15A	4/#14
208	50	3P15A	4/1.6mm

\*Note 2\*

**TYPICAL VALUES**

Amps Per Phase			kVA		kW		kBTU
A	B	C					(kcal)
6.1	8.0	7.3	2.5	1.9			6.6
5.9	6.9	6.5	2.3	2.1			(1794)

**POWER CABLE--ft(m) & CONNECTOR  
conduit connected**

**AIR IN** lower front, lower rear

**AIR OUT** top, side panels

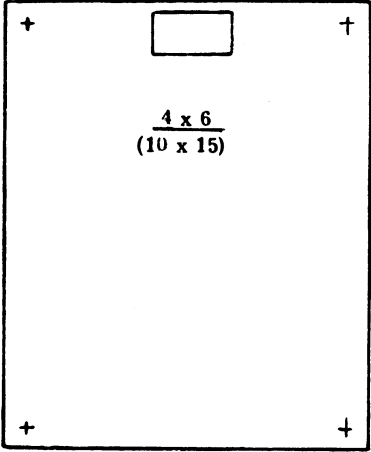
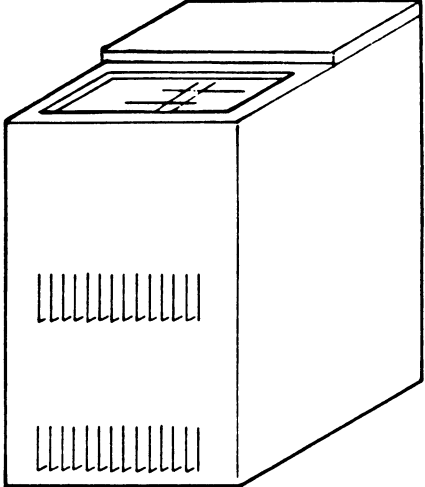
**WEIGHT--lb(kg)**

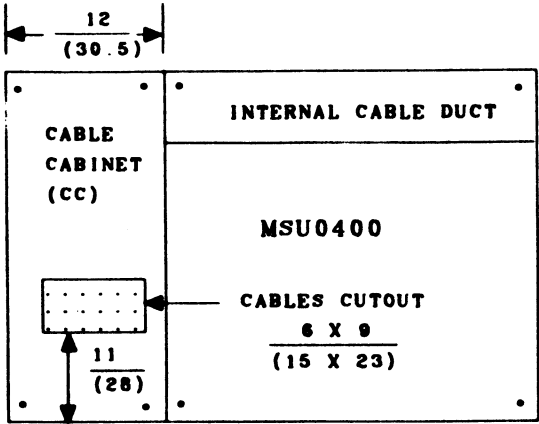
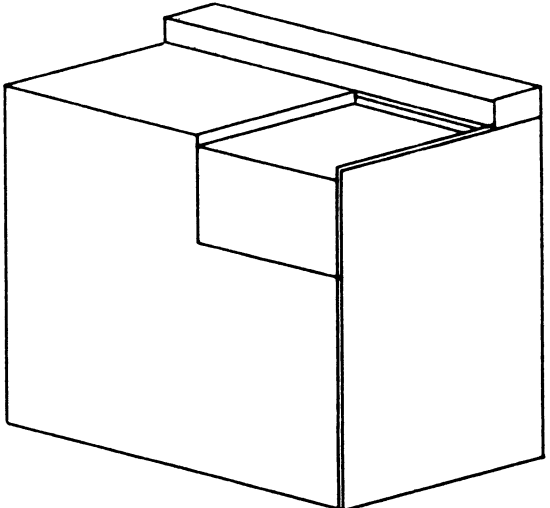
Shipping	Installed
	1016(461)

**DATA CABLES--ft(m) (maximum)**  
 75(22.8) to IO unit  
 75(22.8) to peripherals

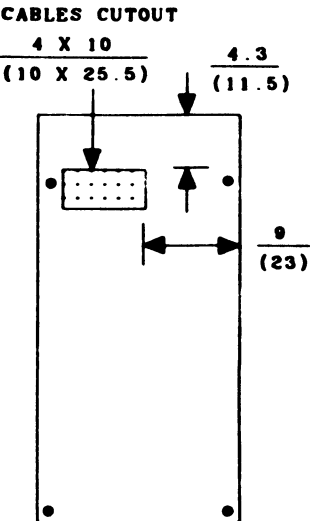
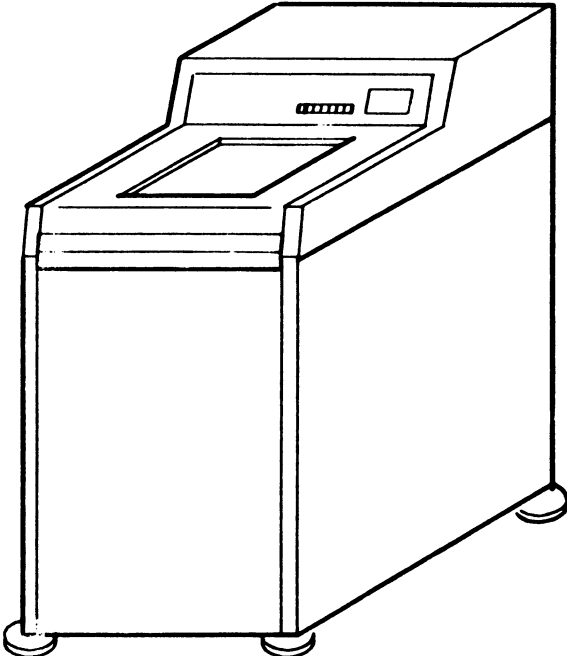
**NOTES:**

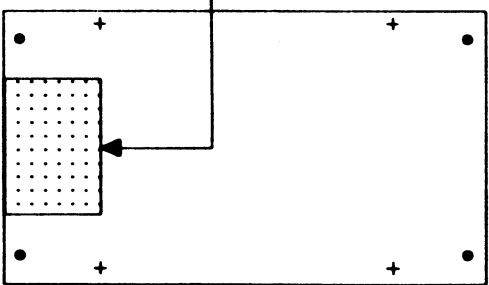
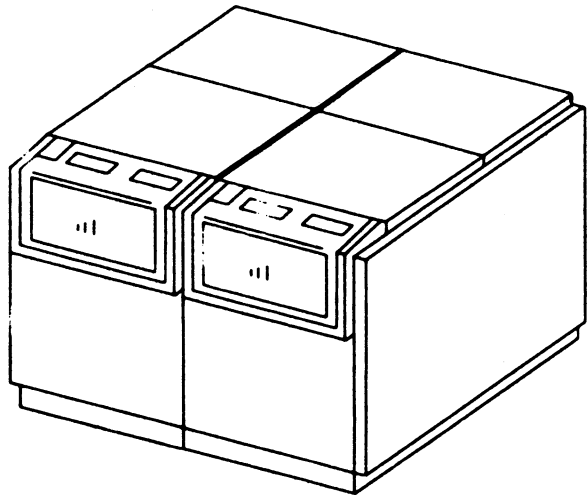
1. Frames of adjacent controllers may be bolted together. If so, adjacent side panels are to be removed. Deduct 1.3(3.3) for each panel removed.
2. Neutral is not used.

<b>MASS STORAGE UNIT</b>	<b>MSU0310</b>																																																			
<b>HIS 7510</b>    <table border="0"> <tr> <td colspan="4" style="text-align: center;"><b>REQUIRED CLEARANCE</b></td> </tr> <tr> <td style="text-align: right;">Front</td> <td style="text-align: center;">36(91)</td> <td style="text-align: center;">Right</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: right;">Back</td> <td style="text-align: center;">30(76)</td> <td style="text-align: center;">Left</td> <td style="text-align: center;">0</td> </tr> </table>	<b>REQUIRED CLEARANCE</b>				Front	36(91)	Right	0	Back	30(76)	Left	0	<b>Height</b> <b>39.5(100.3)</b>    <table border="0"> <tr> <td style="text-align: right;"><b>Width</b></td> <td style="text-align: center;">25(63.5)</td> <td style="text-align: right;"><b>Depth</b></td> <td style="text-align: center;">33(83.8)</td> </tr> </table> <p style="text-align: center;"><b>Dimensions: Inches(Centimeters)</b></p>		<b>Width</b>	25(63.5)	<b>Depth</b>	33(83.8)																																		
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<b>MASS STORAGE UNIT</b>	<b>MSU0400</b>																																		
<p>HIS 7511, 7512 HIS 7513</p>  <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>2(5)</td> <td>Left</td> <td>0</td> </tr> </table>	Front	36(91)	Right	0	Back	2(5)	Left	0	<p>Height 42.3(107.4)</p>  <p>Width 35(88.9)</p> <p>Depth 30(76.2)</p> <p>Dimensions: Inches(Centimeters)</p>																										
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<b>MASS STORAGE UNIT</b>	<b>MSU0402. MSU0451 (MSU45XB)</b>																																																
<p>HIS 7514</p> <p><b>CABLES CUTOUT</b></p>  <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>0</td> </tr> </table>	Front	36(91)	Right	0	Back	30(76)	Left	0	<p>Height 39(99)</p>  <p>Width 22.3(56.5)</p> <p>Depth 44.5(113)</p> <p>Dimensions: Inches(Centimeters)</p>																																								
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<p><b>SERVICE WIRING</b></p> <table border="0"> <thead> <tr> <th>Volts</th> <th>Hz</th> <th>Breaker</th> <th>Circuit Wiring</th> </tr> </thead> <tbody> <tr> <td>208</td> <td>60</td> <td>2P20A</td> <td>3/#12</td> </tr> <tr> <td>220</td> <td>50</td> <td>1P20A</td> <td>3/2mm</td> </tr> </tbody> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> 10(3) &lt;A&gt;</p> <p><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>750(341)</td> <td>Installed</td> <td>700(318)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. Rotate phases on all installed drives so the total load is balanced. The neutral wire (60Hz) is not required.</li> <li>2. Starting current is 40A for 10 seconds maximum.</li> </ol>	Volts	Hz	Breaker	Circuit Wiring	208	60	2P20A	3/#12	220	50	1P20A	3/2mm	Shipping	750(341)	Installed	700(318)	<p><b>TYPICAL VALUES</b></p> <table border="0"> <thead> <tr> <th colspan="3">Amps Per Phase</th> <th colspan="2">kVA</th> <th colspan="2">kW</th> <th>kBTU</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th></th> <th></th> <th></th> <th></th> <th>(kcal)</th> </tr> </thead> <tbody> <tr> <td>7.5</td> <td>7.5</td> <td>-</td> <td>1.6</td> <td>1.3</td> <td></td> <td>4.5</td> <td></td> </tr> <tr> <td>8.5</td> <td>-</td> <td>-</td> <td>1.8</td> <td>1.3</td> <td></td> <td>(1118)</td> <td></td> </tr> </tbody> </table> <p><b>AIR IN</b> lower front</p> <p><b>AIR OUT</b> upper rear</p> <p><b>DATA CABLES--ft(m) (maximum)</b> 75(22.8)</p>	Amps Per Phase			kVA		kW		kBTU	A	B	C					(kcal)	7.5	7.5	-	1.6	1.3		4.5		8.5	-	-	1.8	1.3		(1118)	
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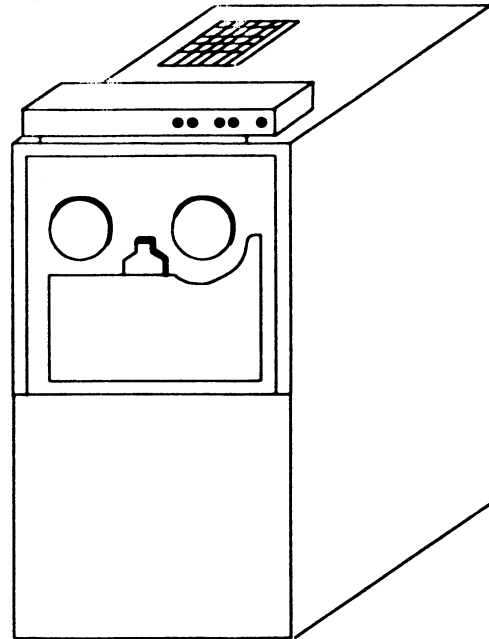
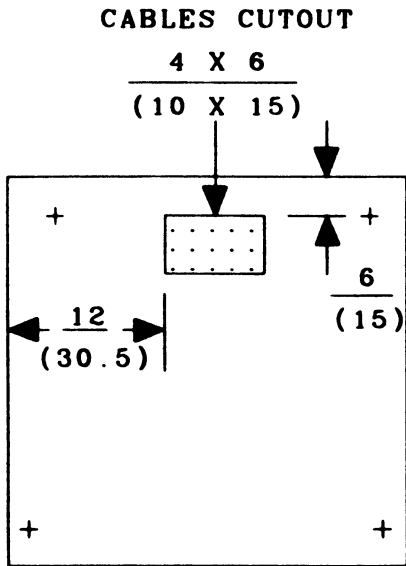
<b>MASS STORAGE UNIT</b>	<b>MSU0500, MSU0501 (MSU05XXB)</b>																																																						
<p><b>HIS 7515</b></p> <div style="text-align: center;"> <p><b>CABLES CUTOUT</b> 4 X 6 (10 X 15)</p>  </div> <table border="0"> <tr> <td></td> <td colspan="2" style="text-align: center;"><b>REQUIRED CLEARANCE</b></td> <td></td> </tr> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>0</td> </tr> </table>		<b>REQUIRED CLEARANCE</b>			Front	36(91)	Right	0	Back	30(76)	Left	0	<p><b>Height</b> 44(111.8)</p> <div style="text-align: center;">  </div> <table border="0"> <tr> <td><b>Width</b></td> <td style="text-align: center;">42(106.7)</td> <td><b>Depth</b></td> <td style="text-align: center;">33(83.8)</td> </tr> </table> <p><b>Dimensions: Inches(Centimeters)</b></p>	<b>Width</b>	42(106.7)	<b>Depth</b>	33(83.8)																																						
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A	B	C	kVA	kW	kBTU (kcal)																																																		
7.5	7.5	7.5	2.7	2.1	7.3																																																		
4.1	4.1	4.1	2.7	2.1	(1807)																																																		

**MAGNETIC TAPE UNIT**

**MTU0410**

**HIS 7516**

**Height**  
66(167.6)



**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

**Width** 30(76.2)      **Depth** 30(76.2)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Circuit Breaker	Wiring
120	60	1P30A	3/#10

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
17.0	-	-	2.1	1.7	5.8

**POWER CABLE--ft(m) & CONNECTOR**  
4(1.2) <Z>

**AIR IN** top

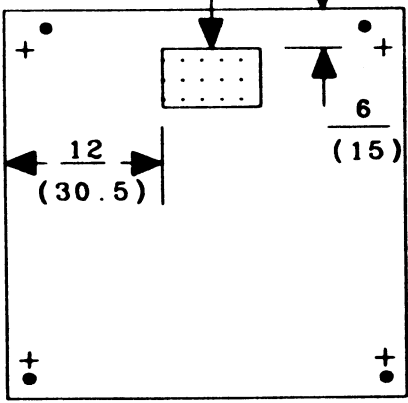
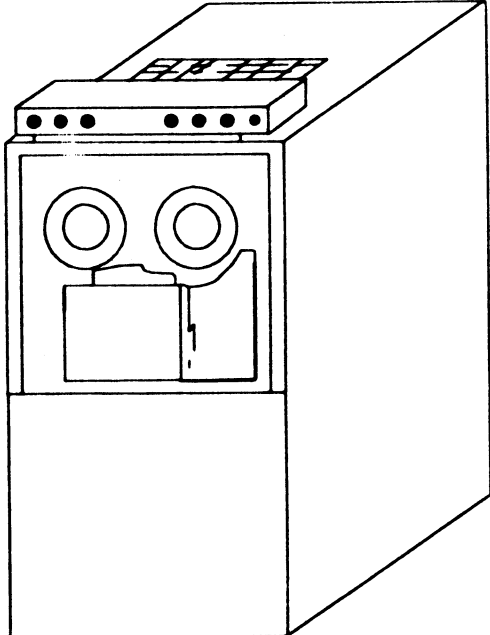
**AIR OUT** rear

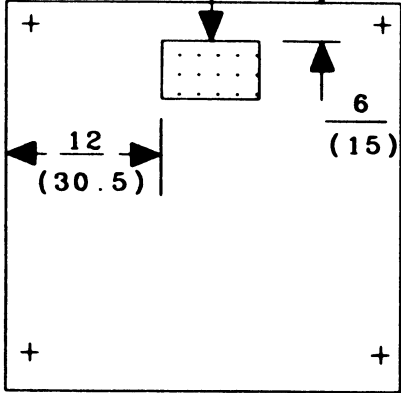
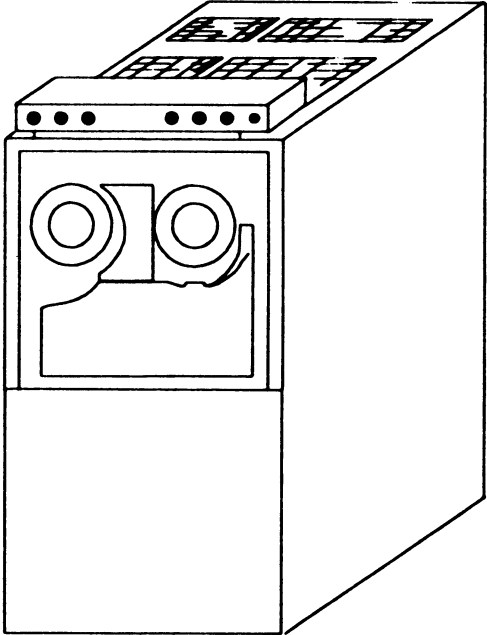
**WEIGHT--lb(kg)**

<b>Shipping</b>	<b>Installed</b>
850(386)	800(363)

**DATA CABLES--ft(m) (maximum)**  
75(22.8)

**NOTES:**

<b>MAGNETIC TAPE UNIT</b>	<b>MTU0500 (MTU0500B)</b>																																								
<p>HIS 7517</p> <p style="text-align: center;"><b>CABLES CUTOUT</b></p> <p style="text-align: center;">4 X 6 (10 X 15)</p>  <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>0</td> </tr> </table>	Front	36(91)	Right	0	Back	30(76)	Left	0	<p>Height 66(167.6)</p>  <p>Width 30(76.2)</p> <p style="text-align: right;">Depth 30(76.2)</p> <p style="text-align: center;">Dimensions: Inches(Centimeters)</p>																																
Front	36(91)	Right	0																																						
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<p style="text-align: center;"><b>SERVICE WIRING</b></p> <table border="0"> <thead> <tr> <th>Volts</th> <th>Hz</th> <th>Breaker</th> <th>Circuit Wiring</th> </tr> </thead> <tbody> <tr> <td>208</td> <td>60</td> <td>3P15A</td> <td>4/#14*</td> </tr> <tr> <td>380Y/220</td> <td>50</td> <td>4P15A</td> <td>5/1.6mm</td> </tr> </tbody> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> 4(1.2) &lt;A&gt;</p> <p style="text-align: center;"><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>800(363)</td> <td>Installed</td> <td>750(341)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>The device is phase sensitive.</li> <li>Neutral is not used (60Hz).</li> <li>The starting current is 30A for 0.2 seconds maximum.</li> </ol>	Volts	Hz	Breaker	Circuit Wiring	208	60	3P15A	4/#14*	380Y/220	50	4P15A	5/1.6mm	Shipping	800(363)	Installed	750(341)	<p style="text-align: center;"><b>TYPICAL VALUES</b></p> <table border="0"> <thead> <tr> <th colspan="3">Amps Per Phase</th> <th>kVA</th> <th>kW</th> <th>kBTU (kcal)</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>6.2</td> <td>5.7</td> <td>6.2</td> <td>2.2</td> <td>1.8</td> <td>6.1</td> </tr> <tr> <td>4.8</td> <td>3.9</td> <td>1.8</td> <td>2.3</td> <td>1.8</td> <td>(1549)</td> </tr> </tbody> </table> <p><b>AIR IN</b> lower rear</p> <p><b>AIR OUT</b> top</p> <p><b>DATA CABLES--ft(m) (maximum)</b> 75(22.8)</p>	Amps Per Phase			kVA	kW	kBTU (kcal)	A	B	C				6.2	5.7	6.2	2.2	1.8	6.1	4.8	3.9	1.8	2.3	1.8	(1549)
Volts	Hz	Breaker	Circuit Wiring																																						
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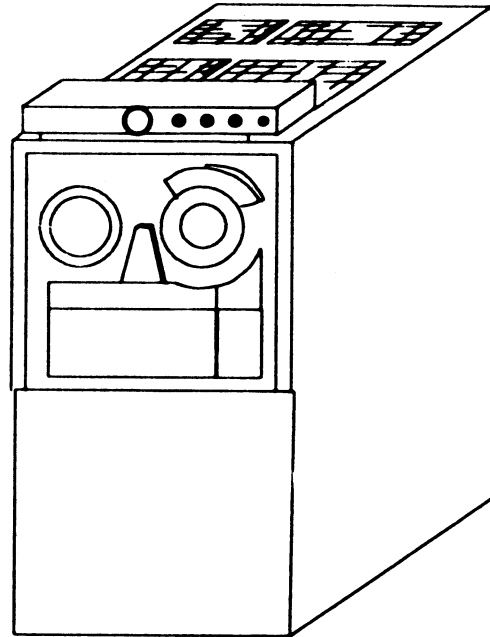
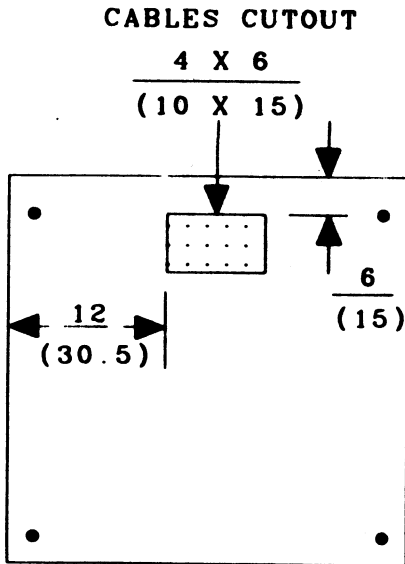
<b>MAGNETIC TAPE UNIT</b>	<b>MTU0600</b>																														
<p>HIS 7518</p> <p style="text-align: center;"><b>CABLES CUTOUT</b></p> <p style="text-align: center;">4 X 6 (10 X 15)</p>  <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>0</td> </tr> </table>	Front	36(91)	Right	0	Back	30(76)	Left	0	<p>Height 66(167.6)</p>  <p>Width 30(76.2)</p> <p>Depth 30(76.2)</p> <p>Dimensions: Inches(Centimeters)</p>																						
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<p style="text-align: center;"><b>SERVICE WIRING</b></p> <table border="0"> <tr> <td>Volts</td> <td>Hz</td> <td>Breaker</td> <td>Wiring</td> </tr> <tr> <td>208</td> <td>60</td> <td>3P20A</td> <td>4/#12*</td> </tr> </table> <p style="text-align: center;">*Note 2*</p> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> &lt;A&gt;</p> <p style="text-align: center;"><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td>1050(477)</td> <td>1025(465)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. The device is phase sensitive.</li> <li>2. Neutral is not used.</li> <li>3. The starting current is 65A for 0.5 second maximum.</li> </ol>	Volts	Hz	Breaker	Wiring	208	60	3P20A	4/#12*	Shipping	Installed	1050(477)	1025(465)	<p style="text-align: center;"><b>TYPICAL VALUES</b></p> <table border="0"> <tr> <td colspan="3">Amps Per Phase</td> <td colspan="2"></td> <td>kBTU</td> </tr> <tr> <td>A</td> <td>B</td> <td>C</td> <td>kVA</td> <td>kW</td> <td>(kcal)</td> </tr> <tr> <td>8.9</td> <td>11.7</td> <td>10.6</td> <td>4.2</td> <td>3.8</td> <td>13.0</td> </tr> </table> <p>AIR IN rear</p> <p>AIR OUT top</p> <p><b>DATA CABLES--ft(m) (maximum)</b> 75(22.8)</p>	Amps Per Phase					kBTU	A	B	C	kVA	kW	(kcal)	8.9	11.7	10.6	4.2	3.8	13.0
Volts	Hz	Breaker	Wiring																												
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Amps Per Phase					kBTU																										
A	B	C	kVA	kW	(kcal)																										
8.9	11.7	10.6	4.2	3.8	13.0																										

**MAGNETIC  
TAPE UNIT**

**MTU0610  
(MTU0610B)**

**HIS 7519**

**Height  
66(167.4)**



**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

**Width** 30.5(77.5)      **Depth** 30.3(77)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Circuit Breaker	Wiring
208	60	3P15A	4/#14*
380Y/220	50	4P15A	5/1.6mm

**TYPICAL VALUES**

Amps Per Phase			kVA		kW		kBTU
A	B	C	kVA	kW			(kcal)
9.8	9.8	9.2	3.1	2.9			9.9
5.3	5.3	5.0	3.1	2.9			(2495)

**POWER CABLE--ft(m) & CONNECTOR  
<A>**

**AIR IN** lower front, lower rear

**AIR OUT** top

**WEIGHT--lb(kg)**

<b>Shipping</b>	<b>Installed</b>
950(431)	900(409)

**DATA CABLES--ft(m) (maximum)**  
75(22.8)

**NOTES:**

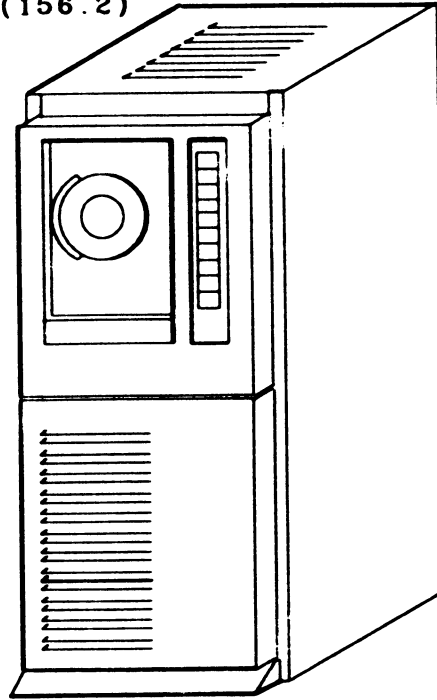
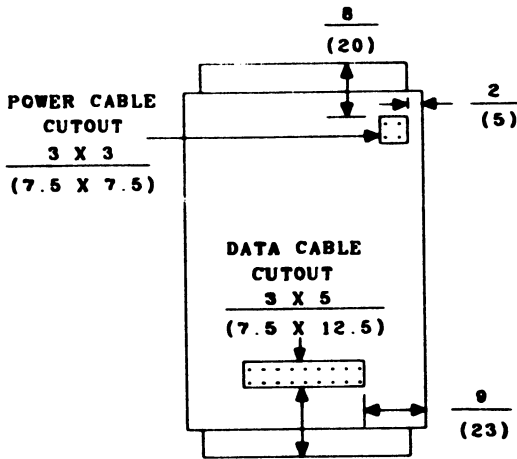
1. The device is phase sensitive.
2. Neutral is not used (60Hz).

**MAGNETIC  
TAPE UNIT**

**MTU0630**

**HIS 7520**

**Height  
61.5 (156.2)**



**REQUIRED CLEARANCE**

Front	36 (91)	Right	0
Back	30 (76)	Left	0

**Width  
24 (61)**

**Depth  
37 (94)**

**Dimensions: Inches (Centimeters)**

**SERVICE WIRING**

Volts	Hz	Circuit	
		Breaker	Wiring
120	60	1P30A	3/#10
220	50	1P15A	3/1.6mm

**TYPICAL VALUES**

Amps Per Phase			kVA	kW	kBTU (kcal)
A	B	C			
15.8	-	-	1.9	1.5	5.1
8.6	-	-	1.9	1.5	(1305)

**POWER CABLE--ft(m) & CONNECTOR  
15(4.6) <Z>**

**AIR IN lower front**

**AIR OUT top**

**WEIGHT--lb(kg)**

Shipping                      Installed  
   650(295)

**DATA CABLES--ft(m) (maximum)  
75(22.8)**

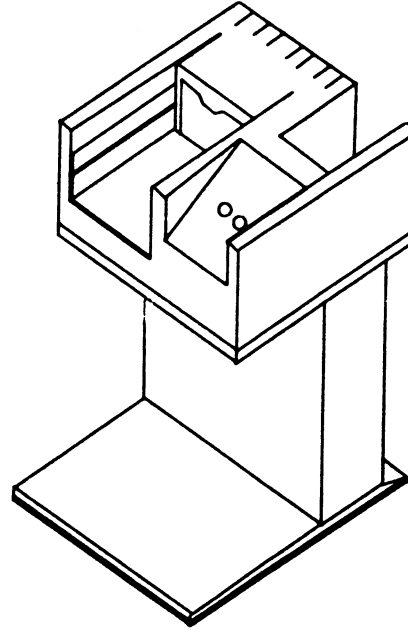
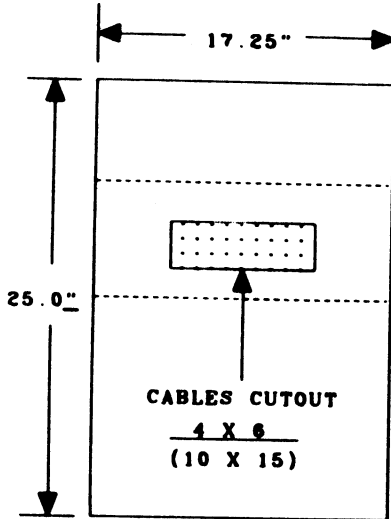
**NOTES:**

**CARD  
READER**

**CRU0501  
(CRU0501B)**

**HIS 7523**

**Height  
36.2(91.4)**



**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	12(30)	Left	0

**Width** 17.3(43.8)      **Depth** 25(63.5)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Circuit Breaker	Wiring
120	60	1P15A	3/#14
220	50	1P15A	3/1.6mm

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
2.0	-	-	.24	.23	0.72
1.0	-	-	.22	.21	(181)

**POWER CABLE--ft(m) & CONNECTOR**  
6(1.8)      <F>

**AIR IN**

**AIR OUT**

**WEIGHT--lb(kg)**

**Shipping**      **Installed**  
90(41)      73(33)

**DATA CABLES--ft(m) (maximum)**  
78.7(24)  
150(45.7) \*Note 1\*

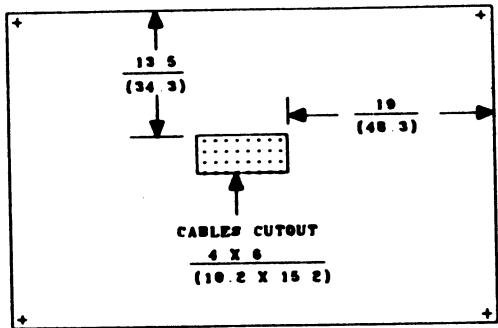
**NOTES:**

- Optional I/O cable to be used with the EURC only.



<b>CARD READER</b>	<b>CRU1050 (CRU1050B)</b>
--------------------	---------------------------

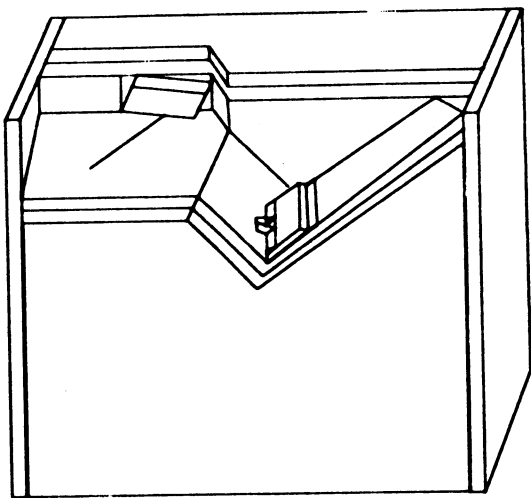
HIS 7524



**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

Height  
36.1(91.7)



Width 45(114.3)	Depth 30(76.2)
--------------------	-------------------

Dimensions: Inches(Centimeters)

SERVICE WIRING			
Volts	Hz	Breaker	Circuit Wiring
120	60	1P20A	3/#12
220	50	1P15A	3/1.6mm

**POWER CABLE--ft(m) & CONNECTOR**  
4(1.2) <Y>

WEIGHT--lb(kg)	
Shipping	Installed
500(227)	460(209)

**NOTES:**

- Optional I/O cable to be used with the EURC only.

TYPICAL VALUES					
Amps Per Phase			kVA	kW	kBTU
A	B	C	kVA	kW	(kcal)
9.2	-	-	1.1	1.0	3.4
5.0	-	-	1.1	1.0	(861)

**AIR IN** bottom  
**AIR OUT** upper rear

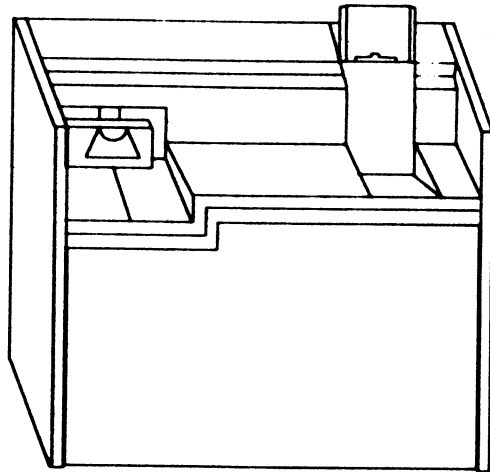
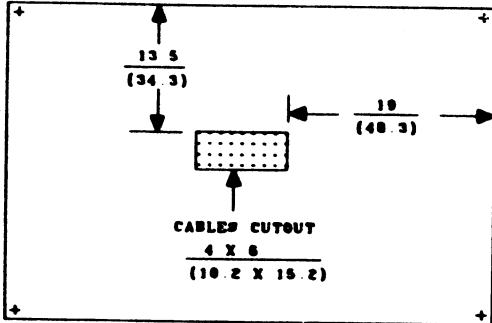
**DATA CABLES--ft(m) (maximum)**  
78.7(24)  
150(45.7) \*Note 1\*

CARD  
PUNCH

PCU0120  
(PCU0120B)

HIS 7521

Height  
44.3(112.5)



REQUIRED CLEARANCE  
Front 36(91) Right 0  
Back 30(76) Left 0

Width 45(114.3) Depth 30(76.2)

Dimensions: Inches(Centimeters)

SERVICE WIRING

Volts	Hz	Circuit Breaker	Wiring
208Y/120	60	3P15A	5/#14
380Y/220	50	4P15A	5/1.6mm

TYPICAL VALUES

Amps Per Phase			kVA	kW	kBTU (kcal)
A	B	C			
4.6	3.3	5.4	1.6	1.3	4.6
2.9	1.9	3.0	1.6	1.3	(1118)

POWER CABLE--ft(m) & CONNECTOR  
4(1.2) <A>

AIR IN bottom

AIR OUT upper rear

WEIGHT--lb(kg)

Shipping 850(386) Installed 800(363)

DATA CABLES--ft(m) (maximum)  
78.7(24)  
150(45.7) \*Note 2\*

NOTES:

1. The device is phase sensitive.
2. Optional I/O cable to be used with the EURC only.

**CARD  
READER/PUNCH**

**PCU0121. CCU0401**

**HIS 7522**

**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

**Height**  
40(101.6)

**Width** 45(114.3)      **Depth** 30(76.2)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Circuit Breaker	Wiring
208Y/120	60	3P15A	5/#14

**POWER CABLE--ft(m) & CONNECTOR**  
<A>

**WEIGHT--lb(kg)**

Shipping	Installed
850(386)	800(363)

**NOTES:**

- The device is phase sensitive.
- Optional I/O cable to be used with the EURC only.

**TYPICAL VALUES**

Amps Per Phase			kVA	kW	kBTU (kcal)
A	B	C			
7.0	8.5	8.0	2.8	2.5	8.5

**AIR IN** bottom

**AIR OUT** upper rear

**DATA CABLES--ft(m) (maximum)**

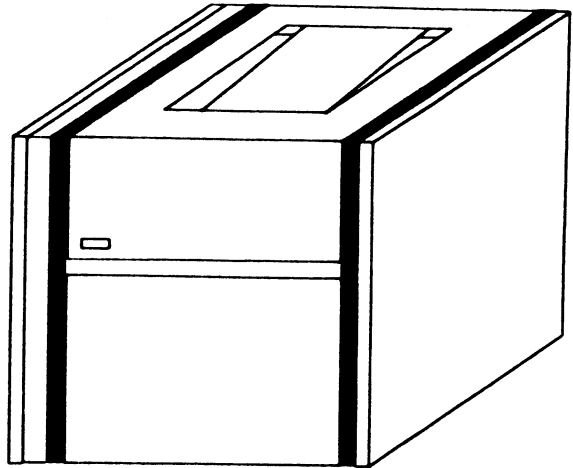
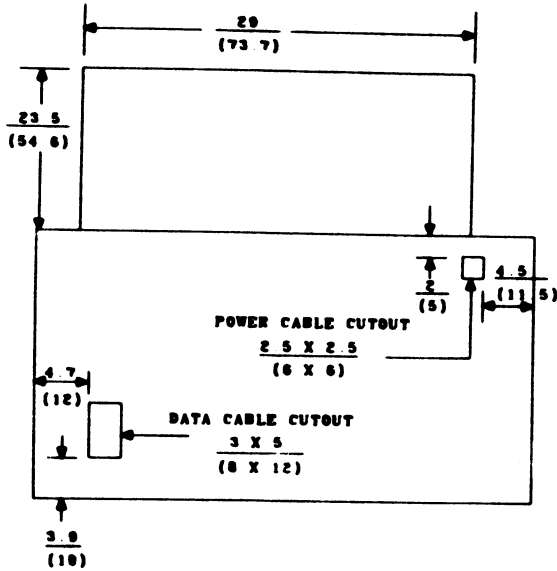
78.7(24)  
150(45.7) \*Note 2\*

**PRINTER**

**PRU0901, PRU1201  
(PRU1101B, PRU1501B)**

**HIS 7526**

**Height  
39.4(100)**



**REQUIRED CLEARANCE**

Front	39(100)	Right	0
Back	*Note 1*	Left	*Note 2*

**Width** 36.2(92)      **Depth** 26(66)

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING**

Volts	Hz	Breaker	Circuit Wiring
120	60	1P15A	3/#14
220	50	1P15A	3/1.6mm

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
8.1	-	-	.97	.77	2.7
3.2	-	-	.7	.5	(430)

**POWER CABLE--ft(m) & CONNECTOR**  
13(4) <F>

**AIR IN** lower left

**AIR OUT** rear

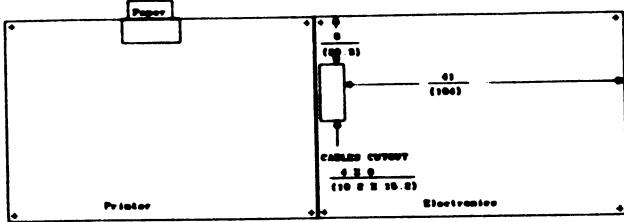
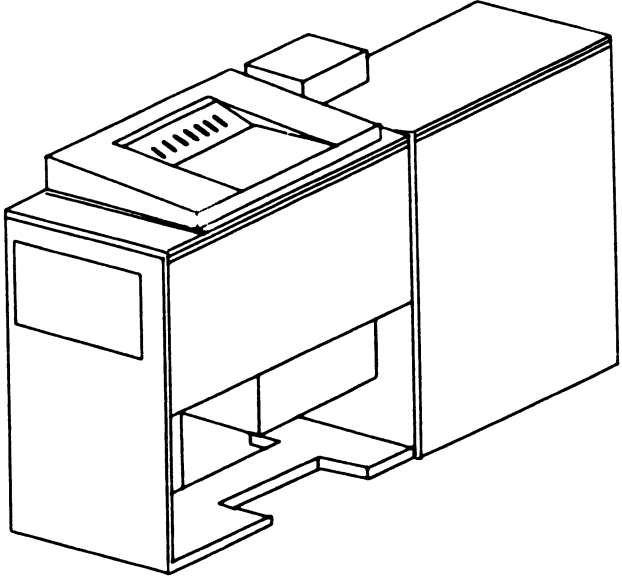
**WEIGHT--lb(kg)**

Shipping	Installed
440(200) -Pru-	374(170)
114(52) -Stkr-	86(39)

**DATA CABLES--ft(m) (maximum)**  
492(150) PDSI cable  
6562(2000) Fiber Optics cable

**NOTES:**

- Back clearance: 60(150) or 70(180) if the Power Stacker is present.
- Left clearance: 36(91) or may be 0 if the printer can be moved for maintenance.

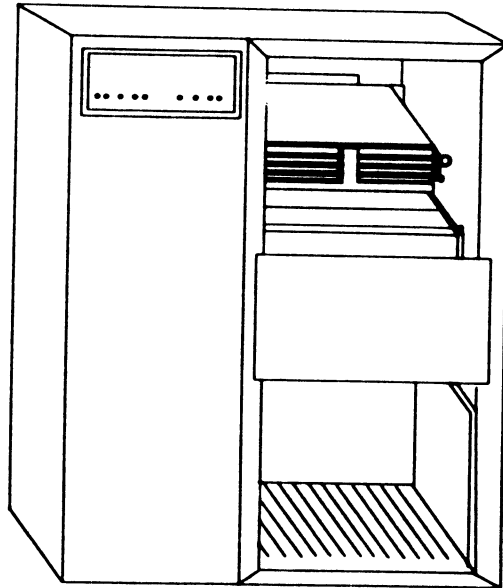
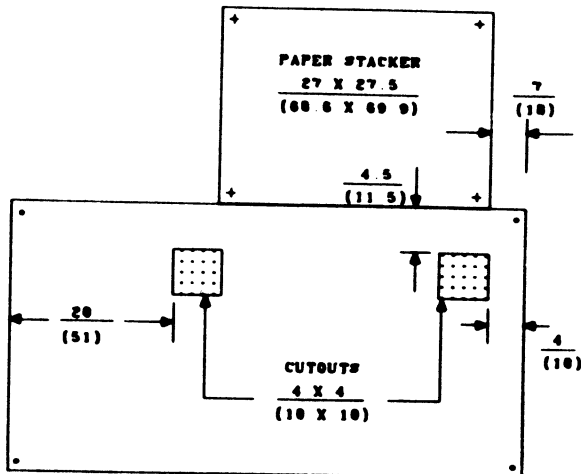
<b>PRINTER</b>	<b>PRU1100</b>																																	
<p>HIS 7525</p>  <p style="text-align: center;"><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>36(91)</td> <td>Right</td> <td>0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>30(76)</td> </tr> </table>	Front	36(91)	Right	0	Back	30(76)	Left	30(76)	<p>Height 40(101.6)</p>  <p>Width 92(233.7)</p> <p style="text-align: right;">Depth 30(76.2)</p> <p style="text-align: center;">Dimensions: Inches(Centimeters)</p>																									
Front	36(91)	Right	0																															
Back	30(76)	Left	30(76)																															
<p style="text-align: center;"><b>SERVICE WIRING</b></p> <table border="0"> <tr> <td>Volts</td> <td>Hz</td> <td>Breaker</td> <td>Circuit</td> <td>Wiring</td> </tr> <tr> <td>208Y/120</td> <td>60</td> <td>3P15A</td> <td></td> <td>5/#14</td> </tr> </table> <p>POWER CABLE--ft(m) &amp; CONNECTOR &lt;A&gt;</p> <p style="text-align: center;"><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td>1300(590)</td> <td>1220(554)</td> </tr> </table> <p>NOTES:</p> <ol style="list-style-type: none"> <li>The unit ships in 2 sections.</li> </ol>	Volts	Hz	Breaker	Circuit	Wiring	208Y/120	60	3P15A		5/#14	Shipping	Installed	1300(590)	1220(554)	<p style="text-align: center;"><b>TYPICAL VALUES</b></p> <table border="0"> <tr> <td colspan="3">Amps Per Phase</td> <td>kVA</td> <td>kW</td> <td>kBTU</td> </tr> <tr> <td>A</td> <td>B</td> <td>C</td> <td></td> <td></td> <td>(kcal)</td> </tr> <tr> <td>6.5</td> <td>7.2</td> <td>6.5</td> <td>2.2</td> <td>1.9</td> <td>6.6</td> </tr> </table> <p>AIR IN</p> <p>AIR OUT</p> <p>DATA CABLES--ft(m) (maximum) 75(22.8)</p>		Amps Per Phase			kVA	kW	kBTU	A	B	C			(kcal)	6.5	7.2	6.5	2.2	1.9	6.6
Volts	Hz	Breaker	Circuit	Wiring																														
208Y/120	60	3P15A		5/#14																														
Shipping	Installed																																	
1300(590)	1220(554)																																	
Amps Per Phase			kVA	kW	kBTU																													
A	B	C			(kcal)																													
6.5	7.2	6.5	2.2	1.9	6.6																													

**PRINTER**

**PRU1200, PRU1600  
(PRU1X00B)**

**HIS 7527**

**Height  
61(154.9)**



**REQUIRED CLEARANCE**

Front	36(91)	Right	30(76)
Back	60(152)	Left	30(76)

**Width** 55(139.7)      **Depth** 30(76.2)

**Dimensions: Inches (Centimeters)**

**SERVICE WIRING**

		Circuit	
Volts	Hz	Breaker	Wiring
208Y/120	60	3P15A	5/#14
380Y/220	50	4P20A	5/2mm

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
8.2	9.1	9.3	3.1	2.6	8.9
4.5	5.0	5.1	3.3	2.6	(2236)

**POWER CABLE--ft(m) & CONNECTOR**  
4(1.2)      <A>

**AIR IN** bottom

**AIR OUT** top

**WEIGHT--lb(kg)**

Shipping	Installed
1900(863)	1780(808)

**DATA CABLES--ft(m) (maximum)**  
78.7(24)  
150(45.7) \*Note 2\*

**NOTES:**

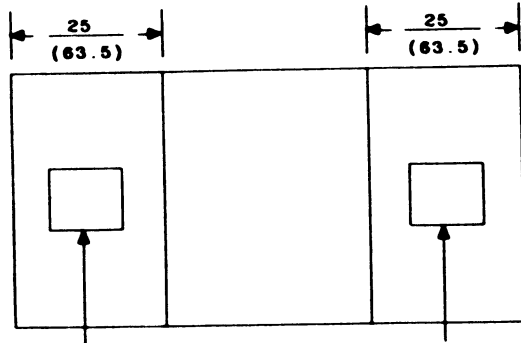
1. The device is phase sensitive.
2. Optional I/O cable to be used with the EURC only.

**DOCUMENT HANDLER  
PROCESSOR**

**DHP0700, DHP0701,  
DEC6000**

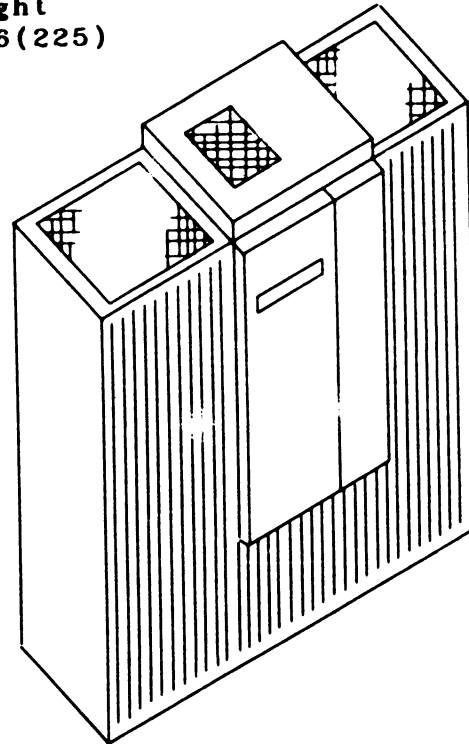
**HIS 7528**

**Height  
88.6(225)**



**POWER & DATA  
CABLES CUTOUT**  
6 X 6  
(15 X 15)

**DATA CABLES CUTOUT**  
6 X 6  
(15 X 15)



**Width  
86(218.4)**

**Depth  
29(73.7)**

**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

**Dimensions: Inches(Centimeters)**

**SERVICE WIRING  
Circuit**

<b>Volts</b>	<b>Hz</b>	<b>Breaker</b>	<b>Wiring</b>
208Y/120	60	3P15A	5/#14

**TYPICAL VALUES**

<b>Amps Per Phase</b>					<b>kBTU</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>kVA</b>	<b>kW</b>	<b>(kcal)</b>
7.8	6.8	6.3	2.4	2.1	7.2

**POWER CABLE--ft(m) & CONNECTOR  
conduit connected**

**AIR IN top**

**AIR OUT**

**WEIGHT--lb(kg)**

<b>Shipping</b>	<b>Installed</b>
2100(953)	2000(908)

**DATA CABLES--ft(m) (maximum)  
75(22.8)**

**NOTES:**

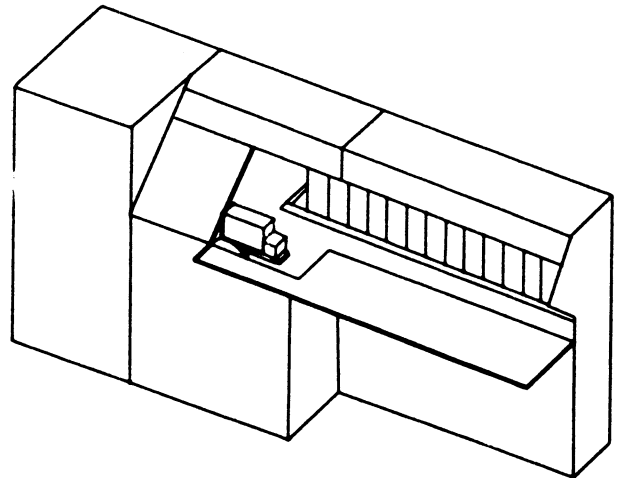
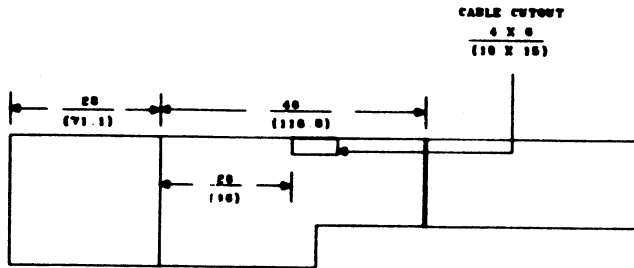
1. The unit ships in 3 sections.

**DOCUMENT  
HANDLER UNIT**

DHU0803, DHU0814

HIS 7529

Height  
62(157.5)



	REQUIRED CLEARANCE	
Front	36(91)	Right 0
Back	30(76)	Left 0

Width 120(304.8)      Depth 30(76.2)

Dimensions: Inches(Centimeters)

SERVICE WIRING			
Circuit			
Volts	Hz	Breaker	Wiring
208Y/120	60	3P15A	5/#14

TYPICAL VALUES					
Amps Per Phase			kVA	kW	kBTU
A	B	C			(kcal)
8.0	8.2	6.1	2.5	2.1	7.2

POWER CABLE--ft(m) & CONNECTOR conduit connected

AIR IN

AIR OUT

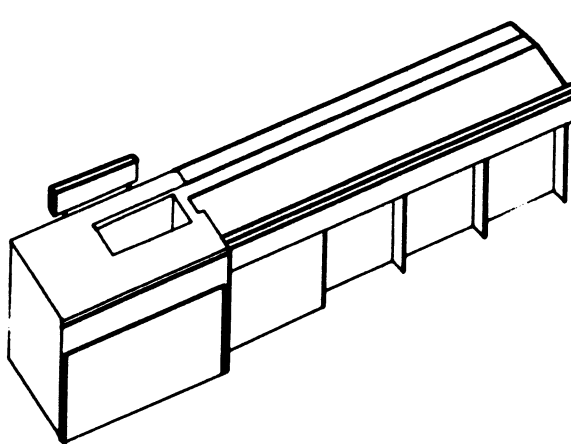
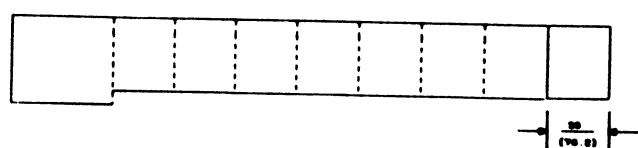
WEIGHT--lb(kg)  
Shipping      Installed  
                    1700(772)

DATA CABLES--ft(m) (maximum)  
90(27.2)

NOTES:



<p><b>DOCUMENT HANDLER UNIT</b></p>	<p>DHU1604, DHU1608, DHU1612, DHU1616</p>																																				
<p>HIS 7530</p>	<p>Height 54.2(137.7)</p>																																				
<div style="text-align: center;"> <p style="font-size: small;">CABLE CUTOUT 4 X 6 (10.2 X 15.2)</p> <p style="font-size: small;">78.5 (199.4)</p> <p style="font-size: small;">30 (76.2)</p> <p style="font-size: small;">29 (74.3)</p> </div>	<div style="text-align: center;"> </div>																																				
<table style="width:100%; border: none;"> <tr> <td></td> <td colspan="2" style="text-align: center;"><b>REQUIRED CLEARANCE</b></td> <td></td> </tr> <tr> <td style="width: 30%;">Front</td> <td style="width: 35%;">36(91)</td> <td style="width: 35%;">Right</td> <td style="width: 10%;">0</td> </tr> <tr> <td>Back</td> <td>30(76)</td> <td>Left</td> <td>0</td> </tr> </table>		<b>REQUIRED CLEARANCE</b>			Front	36(91)	Right	0	Back	30(76)	Left	0	<table style="width:100%; border: none;"> <tr> <td style="width: 60%;">Width</td> <td style="width: 40%; text-align: right;">Depth</td> </tr> <tr> <td>various</td> <td style="text-align: right;">36.3(92.1)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Dimensions: Inches(Centimeters)</td> </tr> </table>	Width	Depth	various	36.3(92.1)	Dimensions: Inches(Centimeters)																			
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SERVICE WIRING				TYPICAL VALUES																																	
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<p>POWER CABLE--ft(m) &amp; CONNECTOR conduit connected</p>																																					
<table style="width:100%; border: none;"> <tr> <th colspan="3" style="text-align: center;">WEIGHT--lb(kg)</th> </tr> <tr> <td style="text-align: center;">Shipping</td> <td></td> <td style="text-align: center;">Installed</td> </tr> <tr> <td style="text-align: center;">1225(556)</td> <td style="text-align: center;">*1*</td> <td style="text-align: center;">1200(545)</td> </tr> <tr> <td style="text-align: center;">175(80)</td> <td style="text-align: center;">*2*</td> <td style="text-align: center;">150(68)</td> </tr> </table>	WEIGHT--lb(kg)			Shipping		Installed	1225(556)	*1*	1200(545)	175(80)	*2*	150(68)																									
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<p>NOTES:</p> <ol style="list-style-type: none"> <li>1. Basic 4 pocket module.</li> <li>2. Each additional 4 pocket add-on module.</li> <li>3. The starting current is 85A for 2 seconds maximum.</li> <li>4. Reference--DRD236.</li> </ol>																																					

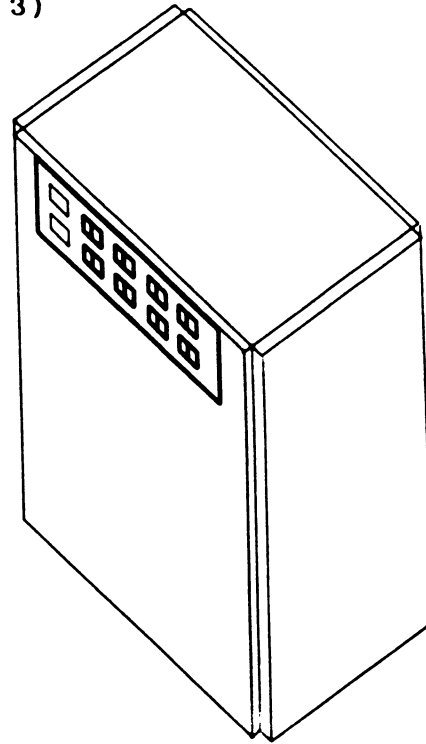
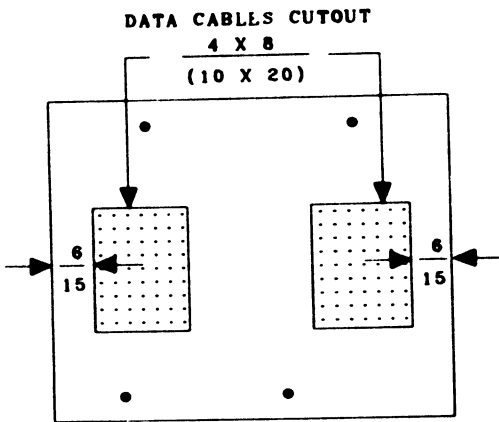
DOCUMENT HANDLER UNIT		DHU1620. DHU1624. DHU1628. DHU1632																											
HIS 7531            		Height 54.2(137.7)         Width various         Depth 36.3(92.1)																											
<b>REQUIRED CLEARANCE</b> Front 36(91) Right 0 Back 30(76) Left 0		<b>Dimensions: Inches (Centimeters)</b>																											
<b>SERVICE WIRING</b>		<b>TYPICAL VALUES</b>																											
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Volts</th> <th style="text-align: left;">Hz</th> <th style="text-align: left;">Circuit Breaker</th> <th style="text-align: left;">Wiring</th> </tr> </thead> <tbody> <tr> <td>208Y/120</td> <td>60</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table>		Volts	Hz	Circuit Breaker	Wiring	208Y/120	60	NA	NA	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left;">Amps Per Phase</th> <th style="text-align: left;">kVA</th> <th style="text-align: left;">kW</th> <th style="text-align: left;">kBTU (kcal)</th> </tr> <tr> <th style="text-align: left;">A</th> <th style="text-align: left;">B</th> <th style="text-align: left;">C</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>10.0</td> <td>10.0</td> <td>-</td> <td>2.0</td> <td>1.7</td> <td>5.8</td> </tr> </tbody> </table>		Amps Per Phase			kVA	kW	kBTU (kcal)	A	B	C				10.0	10.0	-	2.0	1.7	5.8
Volts	Hz	Circuit Breaker	Wiring																										
208Y/120	60	NA	NA																										
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<b>POWER CABLE--ft(m) &amp; CONNECTOR</b> *Note 1*		<b>AIR IN</b>  <b>AIR OUT</b>																											
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WEIGHT--lb(kg)																													
Shipping	Installed																												
525(238)	500(227)																												
<b>NOTES:</b>																													
1. Connects to the Basic 4 Pocket Module.																													

**PERIPHERAL SWITCH UNIT**

PSU0200, PSU0201

HIS 7503

Height  
71(180.3)



Width  
40(101.6)

Depth  
26(66)

Dimensions: Inches(Centimeters)

**REQUIRED CLEARANCE**

Front	36(91)	Right	0
Back	30(76)	Left	0

**SERVICE WIRING**  
Circuit

Volts	Hz	Breaker	Wiring
208Y/120	60	2P15A	4/#14

**TYPICAL VALUES**

Amps Per Phase					kBTU
A	B	C	kVA	kW	(kcal)
1.6	1.6	-	0.4	0.3	1.0

POWER CABLE--ft(m) & CONNECTOR  
conduit connected

AIR IN NA

AIR OUT NA

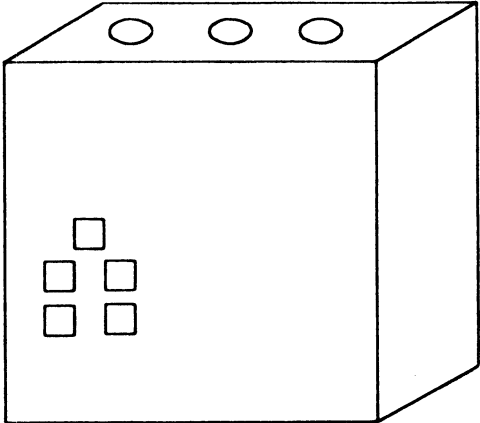
**WEIGHT--lb(kg)**

Shipping	Installed
	400(182)

DATA CABLES--ft(m) (maximum)  
\*Note 1\*

**NOTES:**

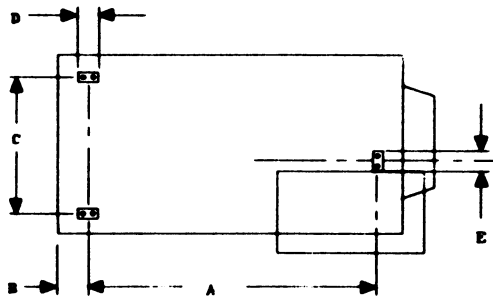
1. Subtract 6ft(1.8m) from maximum cable length for each switch unit the cable is routed through.

<b>MOTOR GENERATOR CONTROL UNIT</b>	<b>MGC655AB</b>																																								
<p>HIS 7502</p> <p>The unit is wall mounted in the computer room.</p> <p>*Note 1*</p> <p><b>REQUIRED CLEARANCE</b></p> <table border="0"> <tr> <td>Front</td> <td>30(76)</td> <td>Right</td> <td>6(15)</td> </tr> <tr> <td>Back</td> <td>0</td> <td>Left</td> <td>6(15)</td> </tr> </table>	Front	30(76)	Right	6(15)	Back	0	Left	6(15)	<p>Height 17.5(44.5)</p>  <p>Width 20.4(51.8)</p> <p>Depth 6(15.2)</p> <p>Dimensions: Inches(Centimeters)</p>																																
Front	30(76)	Right	6(15)																																						
Back	0	Left	6(15)																																						
<p><b>SERVICE WIRING</b></p> <table border="0"> <thead> <tr> <th>Volts</th> <th>Hz</th> <th>Circuit Breaker</th> <th>Wiring</th> </tr> </thead> <tbody> <tr> <td>UTILITY</td> <td>60</td> <td>1P15A</td> <td>3/#14</td> </tr> <tr> <td>To MG</td> <td></td> <td>1P15A</td> <td>2/#14</td> </tr> </tbody> </table> <p><b>POWER CABLE--ft(m) &amp; CONNECTOR</b> conduit connected</p> <p><b>WEIGHT--lb(kg)</b></p> <table border="0"> <tr> <td>Shipping</td> <td>Installed</td> </tr> <tr> <td></td> <td>50(23)</td> </tr> </table> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>Allow for conduit access above and below the MGC unit.</li> <li>MGC to MG control wiring:  200(61) using #14 wire.  325(99) using #12 wire.  500(152) using #10 wire.  Pigtail larger sizes to #14 at the MGC.</li> </ol>	Volts	Hz	Circuit Breaker	Wiring	UTILITY	60	1P15A	3/#14	To MG		1P15A	2/#14	Shipping	Installed		50(23)	<p><b>TYPICAL VALUES</b></p> <table border="0"> <thead> <tr> <th colspan="3">Amps Per Phase</th> <th>kVA</th> <th>kW</th> <th>kBTU</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th></th> <th></th> <th>(kcal)</th> </tr> </thead> <tbody> <tr> <td>1.0</td> <td>-</td> <td>-</td> <td>0.2</td> <td>0.2</td> <td>0.4</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p><b>AIR IN</b> NA</p> <p><b>AIR OUT</b> NA</p> <p><b>CONTROL WIRING--ft(m) (maximum)</b> *Note 2* to MG (5 wires)</p>	Amps Per Phase			kVA	kW	kBTU	A	B	C			(kcal)	1.0	-	-	0.2	0.2	0.4	-	-	-	-	-	-
Volts	Hz	Circuit Breaker	Wiring																																						
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1.0	-	-	0.2	0.2	0.4																																				
-	-	-	-	-	-																																				

**MOTOR  
GENERATOR**

**MG8030B, MG8031B**

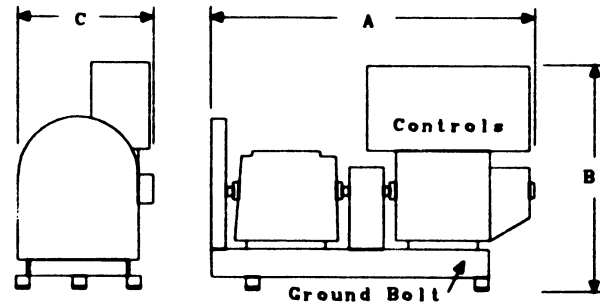
**HIS 7502**



Note Dia. 437"

**Mounting Pad Dimensions**

Model	KW	A	B	C	D	E
8030	25	39"	13"	22"	4 12"	5 12"
8031	50	44 5"	12 75"	27"	4 12"	5 12"



Model	KW	A	B	C	Weight *
8030	25	67"	45"	28"	1650 lbs
8031	50	72"	55"	33"	2750 lbs

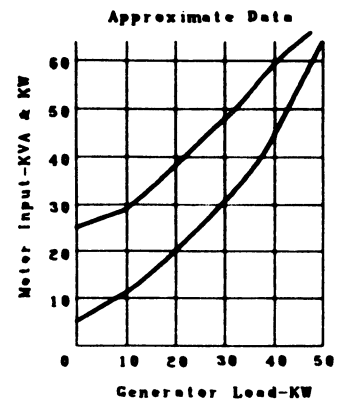
**REQUIRED CLEARANCE**

Front	42(107)	Right	36(91)
Back	36(91)	Left	36(91)

Dimensions: Inches (Centimeters)

**AC POWER REQUIREMENTS**

Motor - Generator Set	Load		Motor		KVA	KW	kBTU/hr.
	Amps/Phase		HP	Code			
<b>4WMC8030</b>		4 sec.	40	G.H			26
Output	87				31.3	25	
Input-208 Volts	108	570			38.8	32.1	
Input-440 Volts	51	300			38.8	32.1	
Input-480 Volts	51	330			42.3	32.6	
<b>4WMC8031</b>		4 sec.	78	E.G			43.7
Output	174				62.5	50	
Input-208 Volts	212	950		(G)	76.0	62.8	
Input-240 Volts	196	1140		(G)	81.4	62.8	
Input-440 Volts	100	500		(C)	76.0	62.8	
Input-480 Volts	98	570		(C)	81.4	62.8	



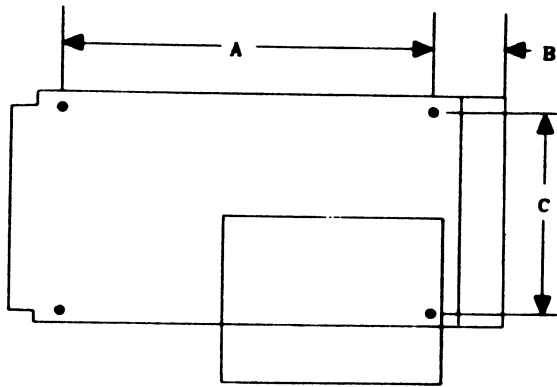
**NOTES:**

1. Wiring to/from MG should have negligible voltage drop.

**MOTOR GENERATOR**

**MG8030C. MG8031C**

**HIS 7502**



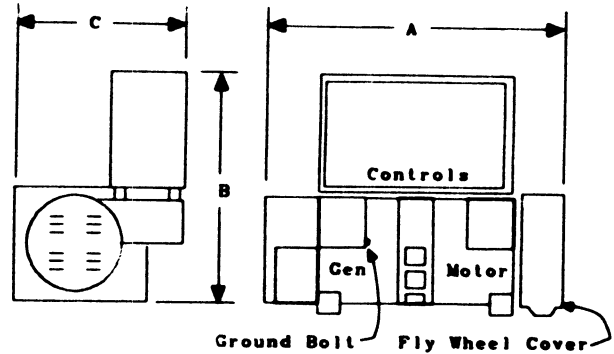
Use 1/2" Bolts

**MOUNTING PAD DIMENSIONS**

Model	KW	A	B	C
8030	25	31"	11"	19.5"
8031	50	31.75"	12"	19.5"

**REQUIRED CLEARANCE**

Front	42(107)	Right	36(91)
Back	36(91)	Left	36(91)

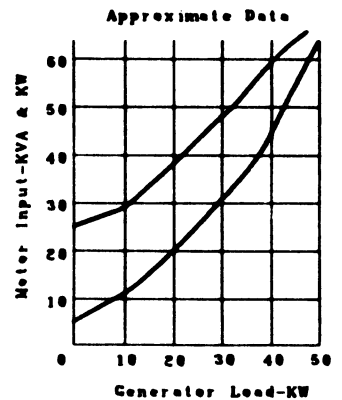


Model	KW	A	B	C	Weight*
8030	25	55"	50"	26"	1800 lbs
8031	50	60"	40"	33"	2700 lbs

Dimensions: Inches (Centimeters)


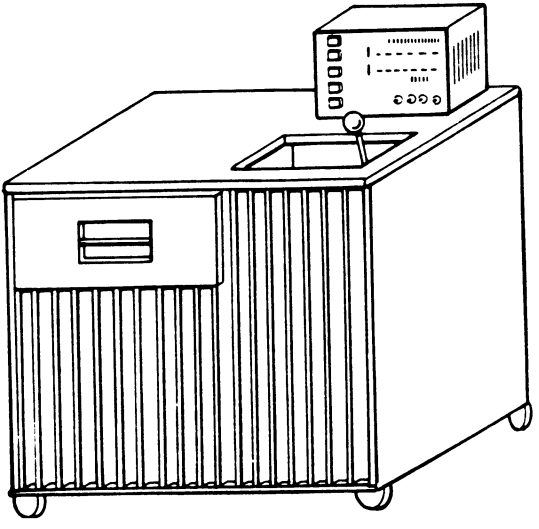
**AC POWER REQUIREMENTS**

Motor - Generator Set	Load		Motor		KVA	KW	kBTU/hr.
	Amps/Phase		HP	Code			
	Run	Start					
<b>4WMC8030</b>		4 sec.	40	G.H			30
Output	87				31.3	25	
Input-208 Volts	108	595			38.8	32.1	
Input-440 Volts	51	315			38.8	32.1	
Input-480 Volts	51	345			42.3	32.6	
<b>4WMC8031</b>		4 sec.	78	E.G			46
Output	174				62.5	50	
Input-208 Volts	212	1180		(C)	76.0	62.8	
Input-240 Volts	198	1360		(C)	81.4	62.8	
Input-440 Volts	100	625		(C)	76.0	62.8	
Input-480 Volts	98	662		(C)	81.4	62.8	

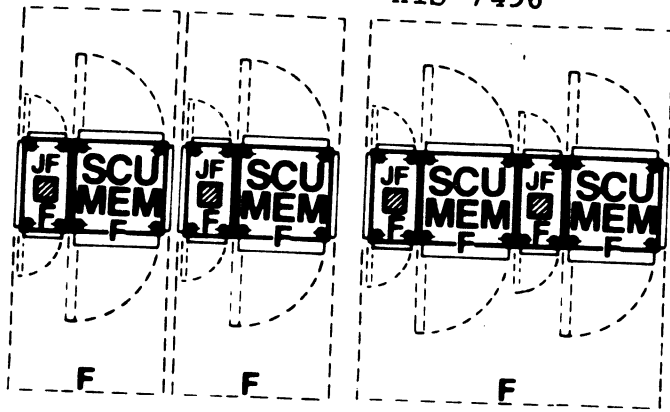


**NOTES:**

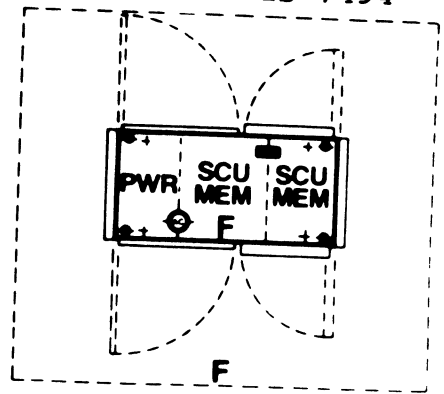
1. Wiring to/from MG should have negligible voltage drop.

<b>BOARD TESTER</b>	<b>BTF655</b>																																																															
<b>HIS 7532</b>  	<b>Height</b> 51.5 (130.8)    <b>Width</b> <span style="float: right;"><b>Depth</b></span> 48.8 (123.8) <span style="float: right;">32.5 (82.6)</span>  <b>Dimensions: Inches (Centimeters)</b>																																																															
<table border="0"> <tr> <td colspan="4" style="text-align: center;"><b>REQUIRED CLEARANCE</b></td> </tr> <tr> <td style="text-align: right;">Front</td> <td style="text-align: center;">30 (76)</td> <td style="text-align: right;">Right</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: right;">Back</td> <td style="text-align: center;">0</td> <td style="text-align: right;">Left</td> <td style="text-align: center;">0</td> </tr> </table> <table border="0"> <tr> <td colspan="4" style="text-align: center;"><b>SERVICE WIRING</b></td> </tr> <tr> <td></td> <td colspan="3" style="text-align: center;">Circuit</td> </tr> <tr> <td style="text-align: right;">Volts</td> <td style="text-align: center;">Hz</td> <td style="text-align: right;">Breaker</td> <td style="text-align: center;">Wiring</td> </tr> <tr> <td style="text-align: right;">120</td> <td style="text-align: center;">60</td> <td style="text-align: right;">1P15A</td> <td style="text-align: center;">3/#14</td> </tr> </table> <b>POWER CABLE--ft(m) &amp; CONNECTOR</b>   <table border="0"> <tr> <td colspan="2" style="text-align: center;"><b>WEIGHT--lb(kg)</b></td> </tr> <tr> <td style="text-align: right;">Shipping</td> <td style="text-align: right;">Installed</td> </tr> <tr> <td style="text-align: right;">720 (327)</td> <td style="text-align: right;">720 (327)</td> </tr> </table> <b>NOTES:</b>	<b>REQUIRED CLEARANCE</b>				Front	30 (76)	Right	0	Back	0	Left	0	<b>SERVICE WIRING</b>					Circuit			Volts	Hz	Breaker	Wiring	120	60	1P15A	3/#14	<b>WEIGHT--lb(kg)</b>		Shipping	Installed	720 (327)	720 (327)	<table border="0"> <tr> <td colspan="7" style="text-align: center;"><b>TYPICAL VALUES</b></td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>Amps Per Phase</b></td> <td colspan="4"></td> </tr> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">kVA</td> <td style="text-align: center;">kW</td> <td colspan="2" style="text-align: center;">kBTU (kcal)</td> </tr> <tr> <td style="text-align: center;">8.0</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">0.9</td> <td colspan="2" style="text-align: center;">3.0</td> </tr> </table> <b>AIR IN</b>  <b>AIR OUT</b>  <b>DATA CABLES--ft(m) (maximum)</b> NA		<b>TYPICAL VALUES</b>							<b>Amps Per Phase</b>							A	B	C	kVA	kW	kBTU (kcal)		8.0	-	-	1.0	0.9	3.0	
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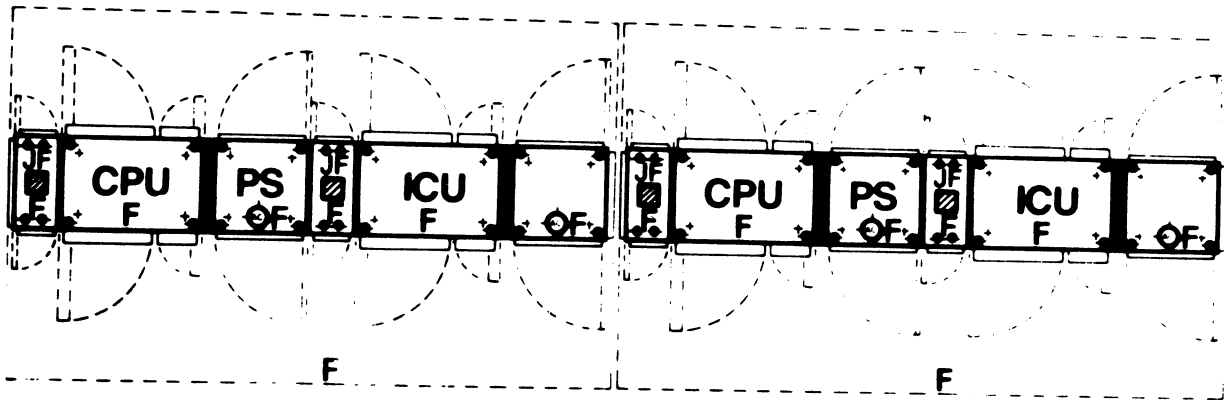
AMM001, MMM001A -- HIS 7496



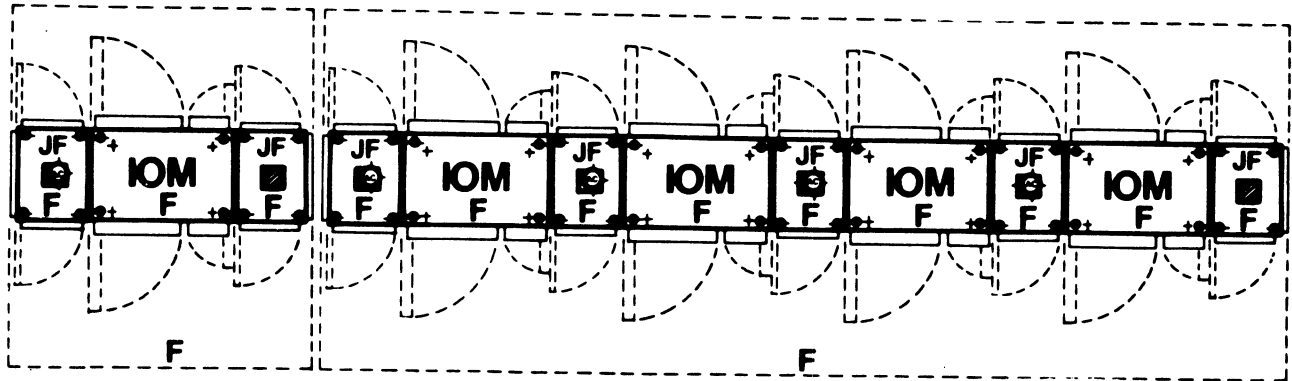
MCP601A -- HIS 7494



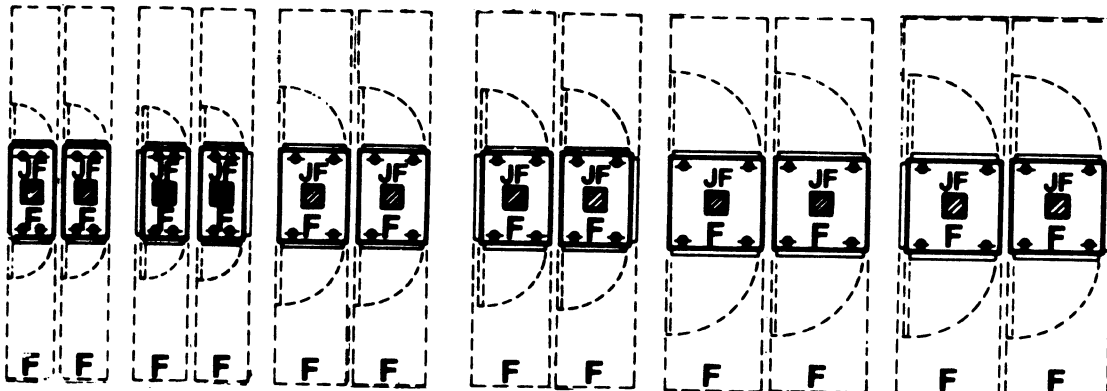
CSM601 -- HIS 7492



DC8634 -- HIS 7495



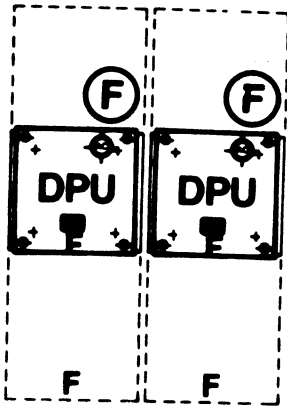
JUNCTION FRAMES, 12", 18" & 24" -- HIS 7486



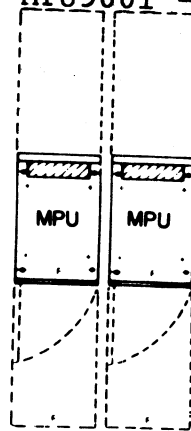




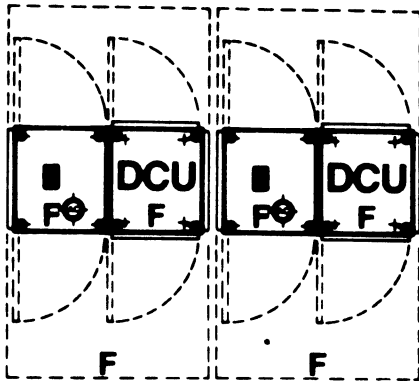
DPU100A -- HIS 7493



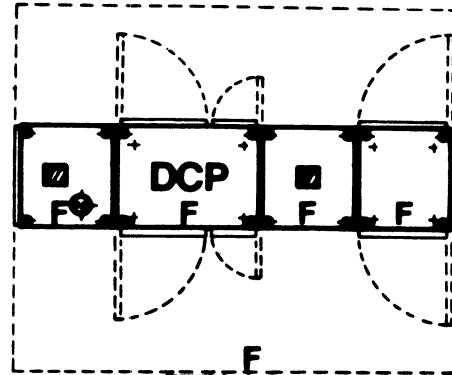
MPU9001 -- HIS 7570



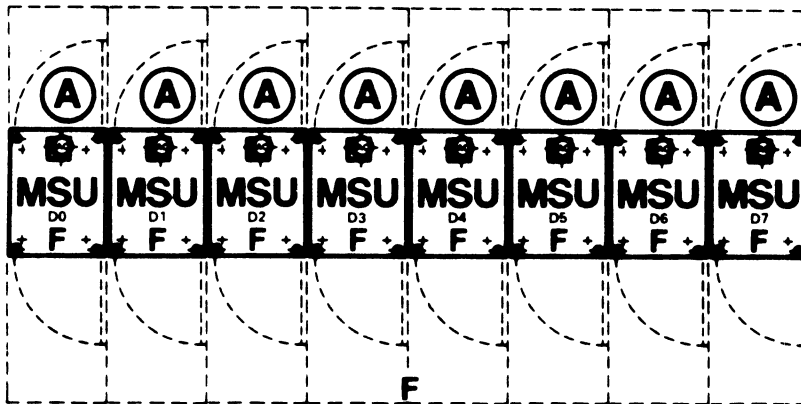
DCU6201, DCU620 -- HIS 7508



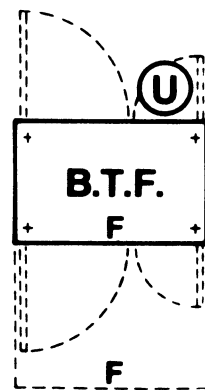
DCU6616 - DCU6632 -- HIS 7507



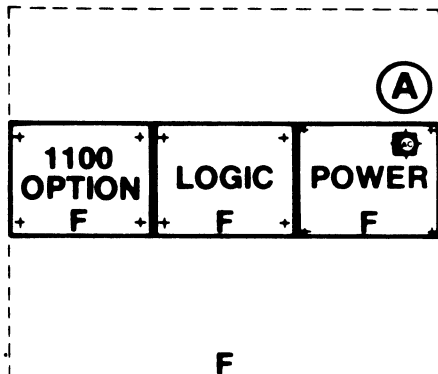
MSU0310 -- HIS 7510



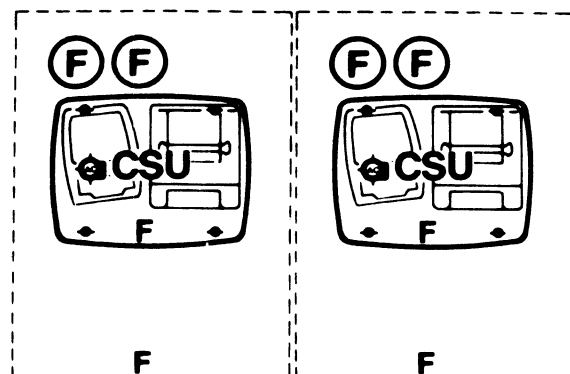
BTF655 -- HIS 7532



CPF6001 -- HIS 7497

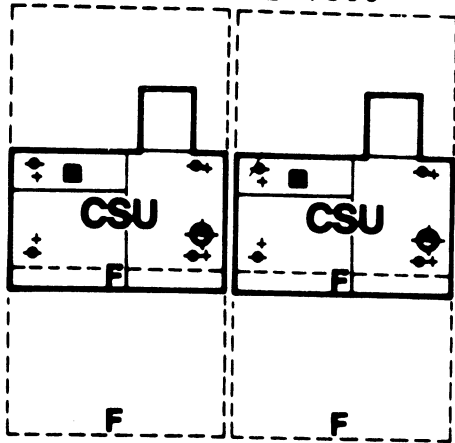


CSU6601 -- HIS 7498

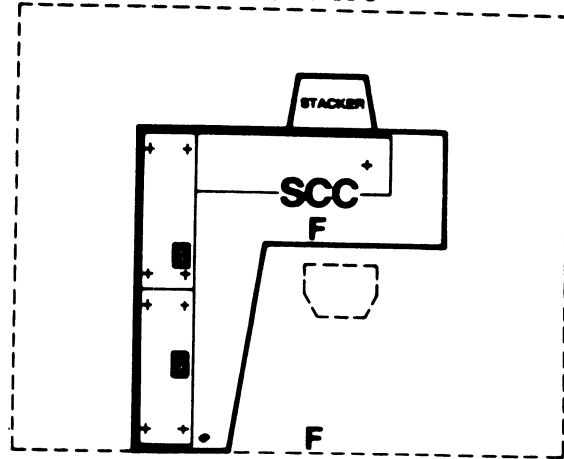




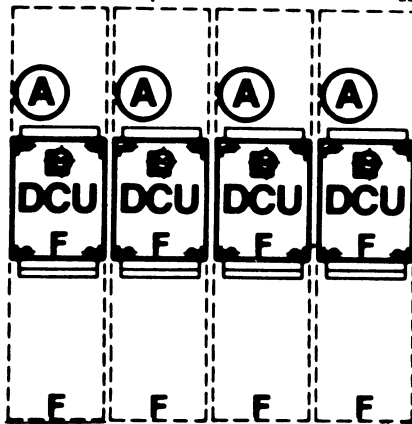
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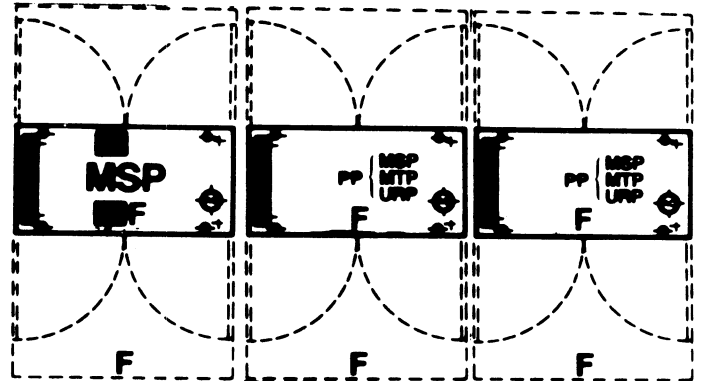
CSU6005 -- HIS 7499



DCU666X, DCU8010 -- HIS 7505



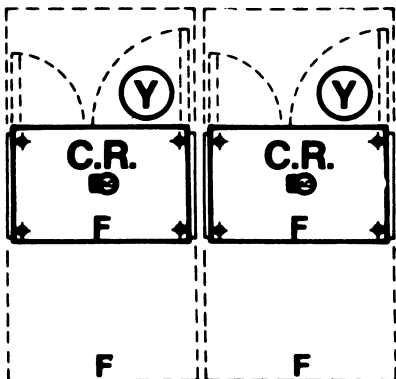
MSP060X, MTP06XX,  
URP060X -- HIS 7509



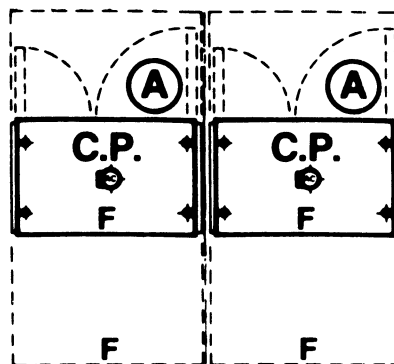
CRU0501 -- HIS 7523



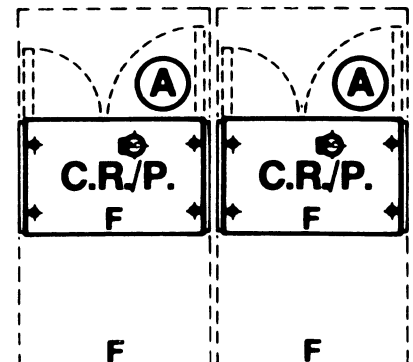
CRU1050 -- HIS 7524



PCU0120 -- HIS 7521

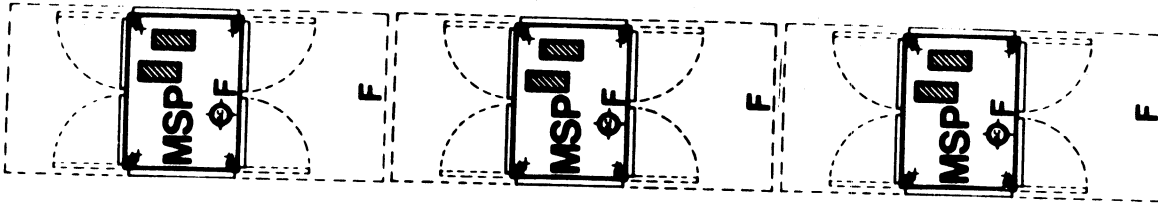


PCU0121, CCU0401  
-- HIS 7522

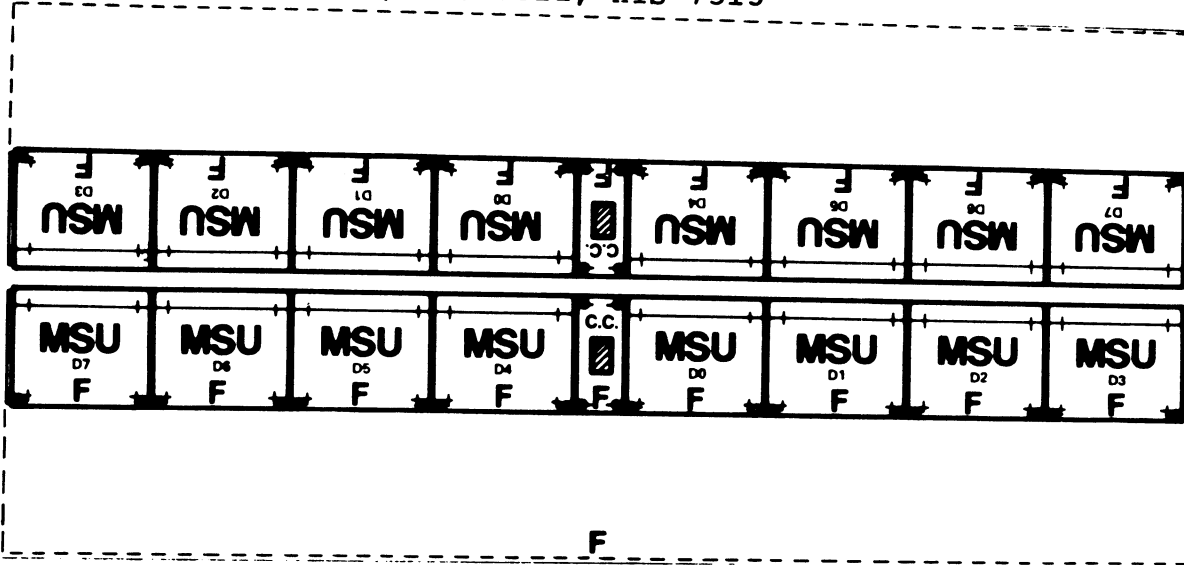




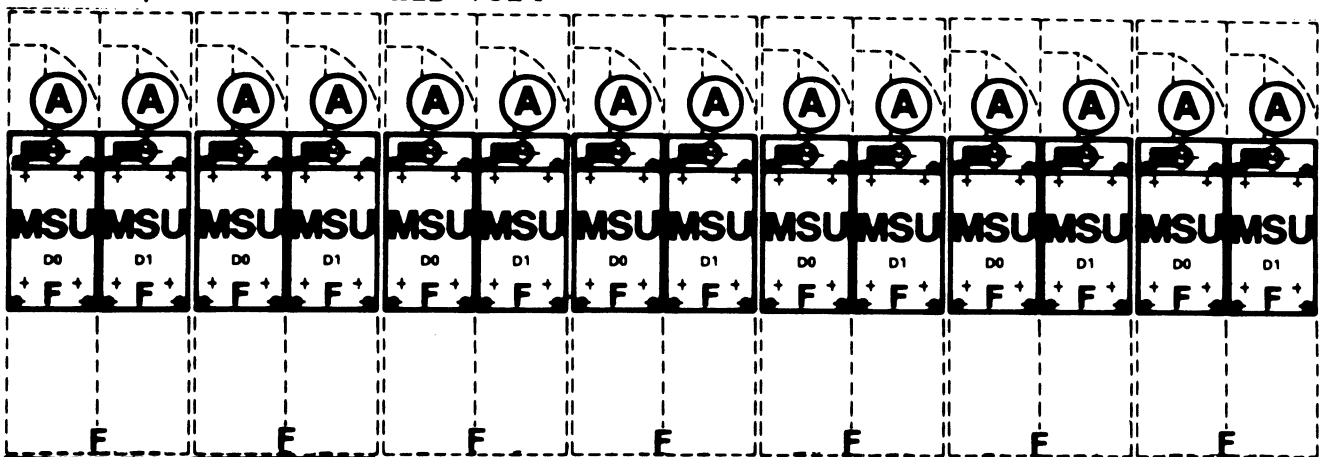
MSPO611, MSP0612 -- HIS 7487



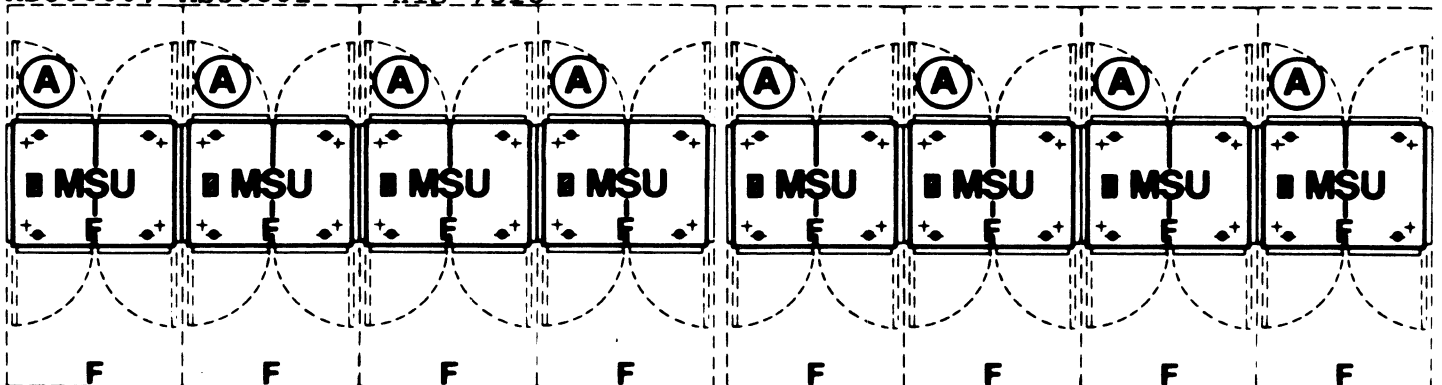
MSU0400 -- HIS 7511, HIS 7512, HIS 7513



MSU0402, MSU0451 -- HIS 7514

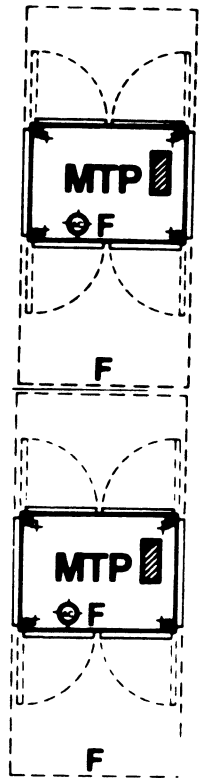


MSU0500, MSU0501 -- HIS 7515

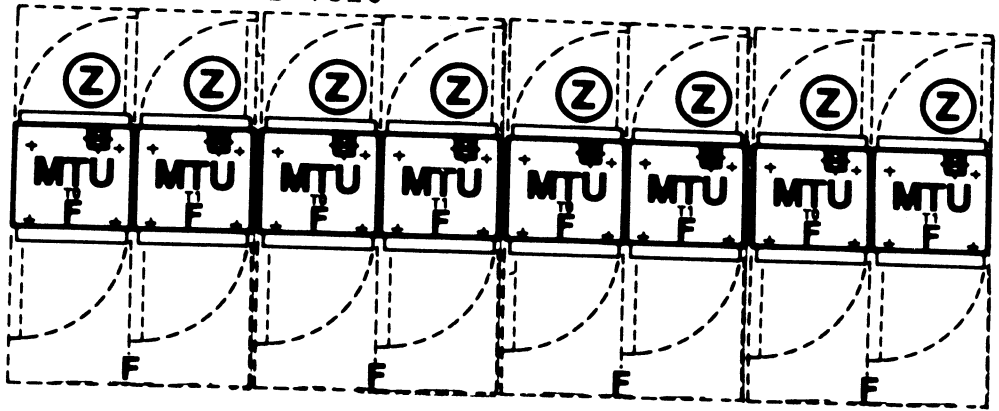




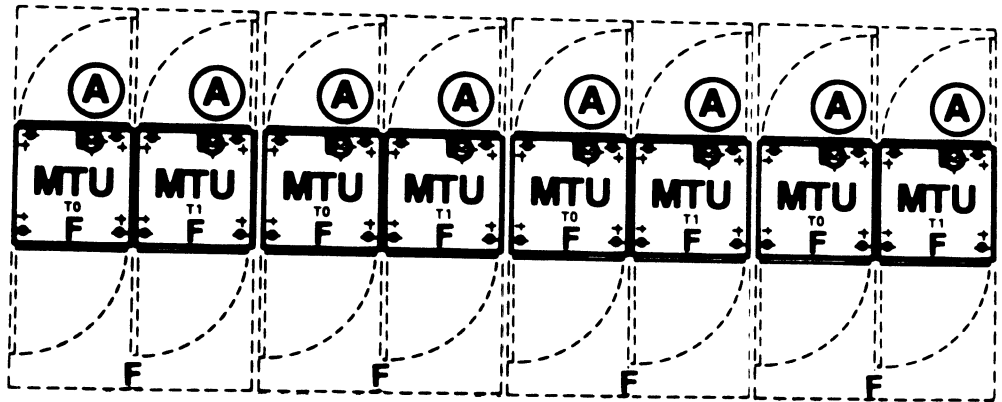
MTP0611  
-- HIS 7487



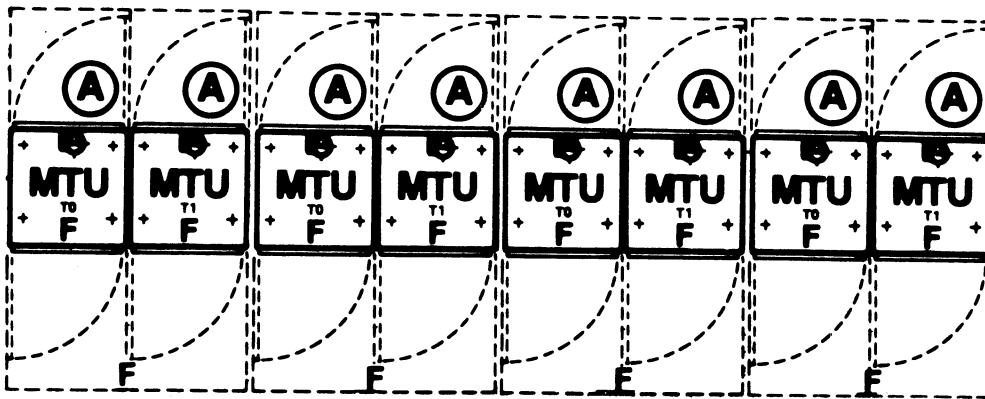
MTU0410 -- HIS 7516



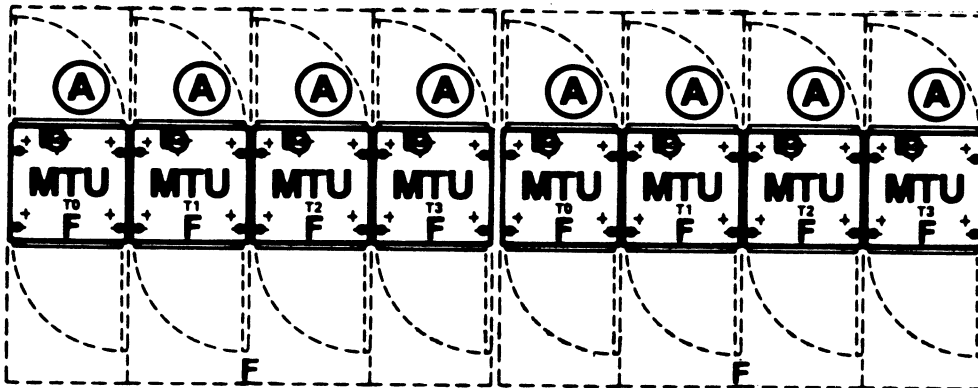
MTU0500 -- HIS 7517



MTU0600 -- HIS 7518



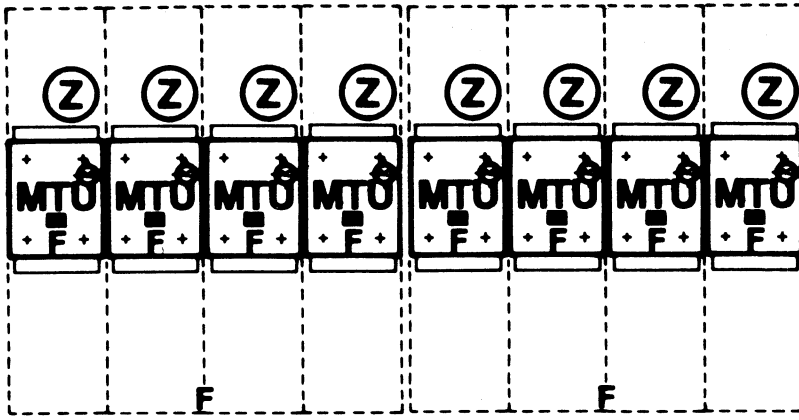
MTU0610 -- HIS 7519



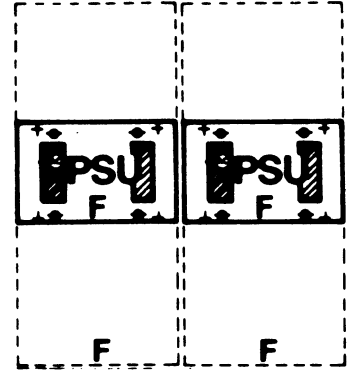




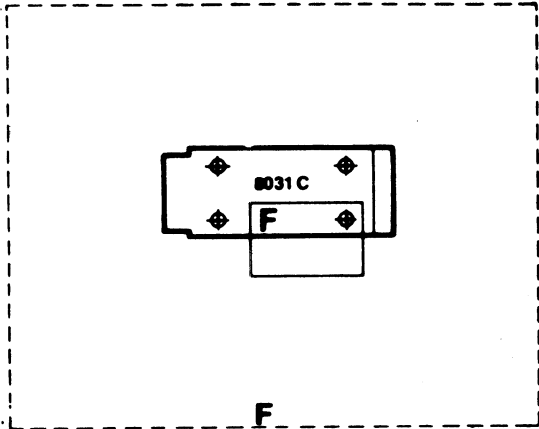
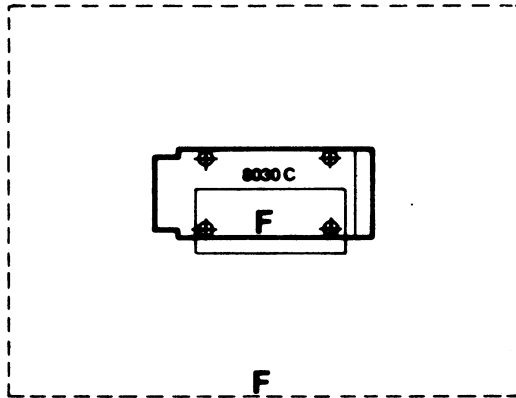
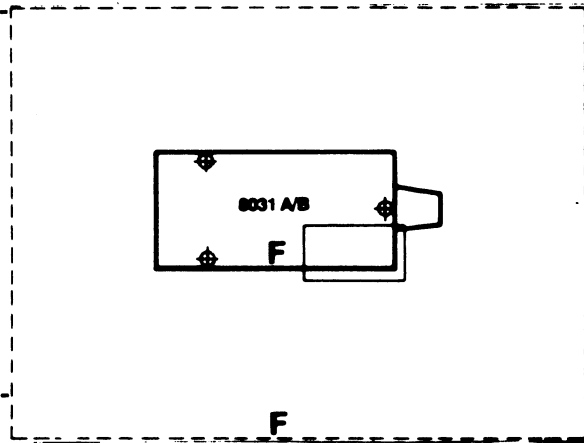
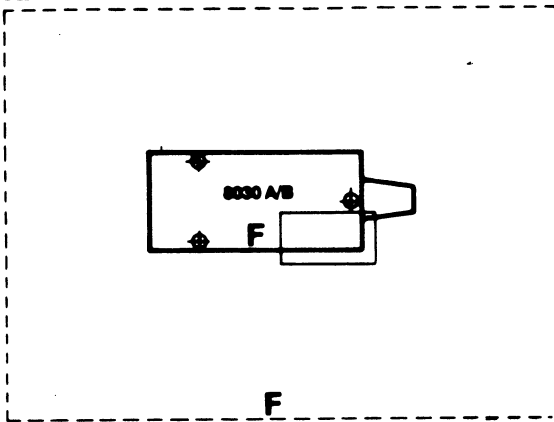
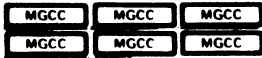
MTU0630 -- HIS 7520



PSU0200, PSU0201  
-- HIS 7503

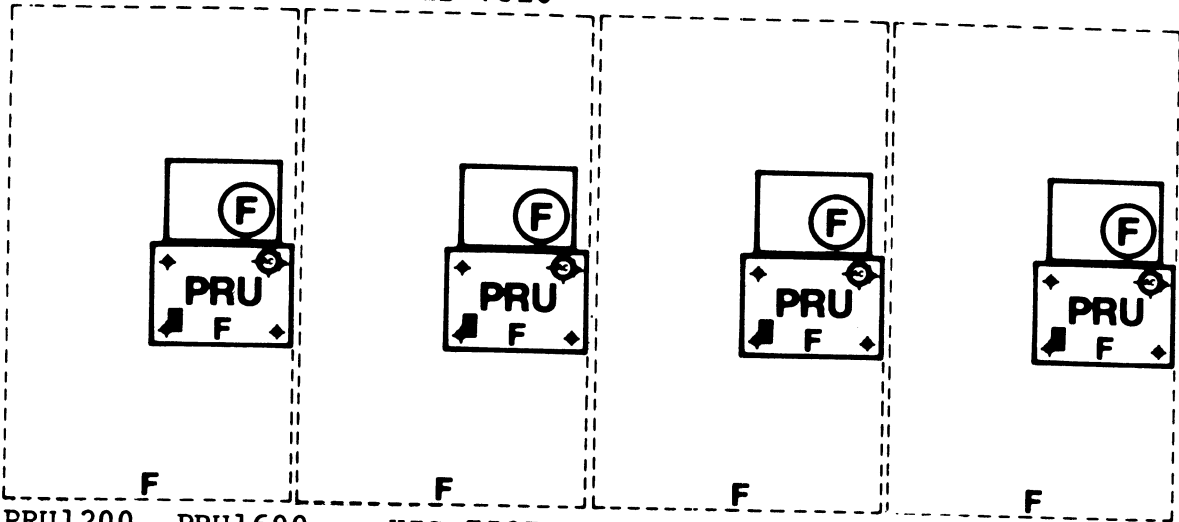


MOTOR GENERATOR SETS

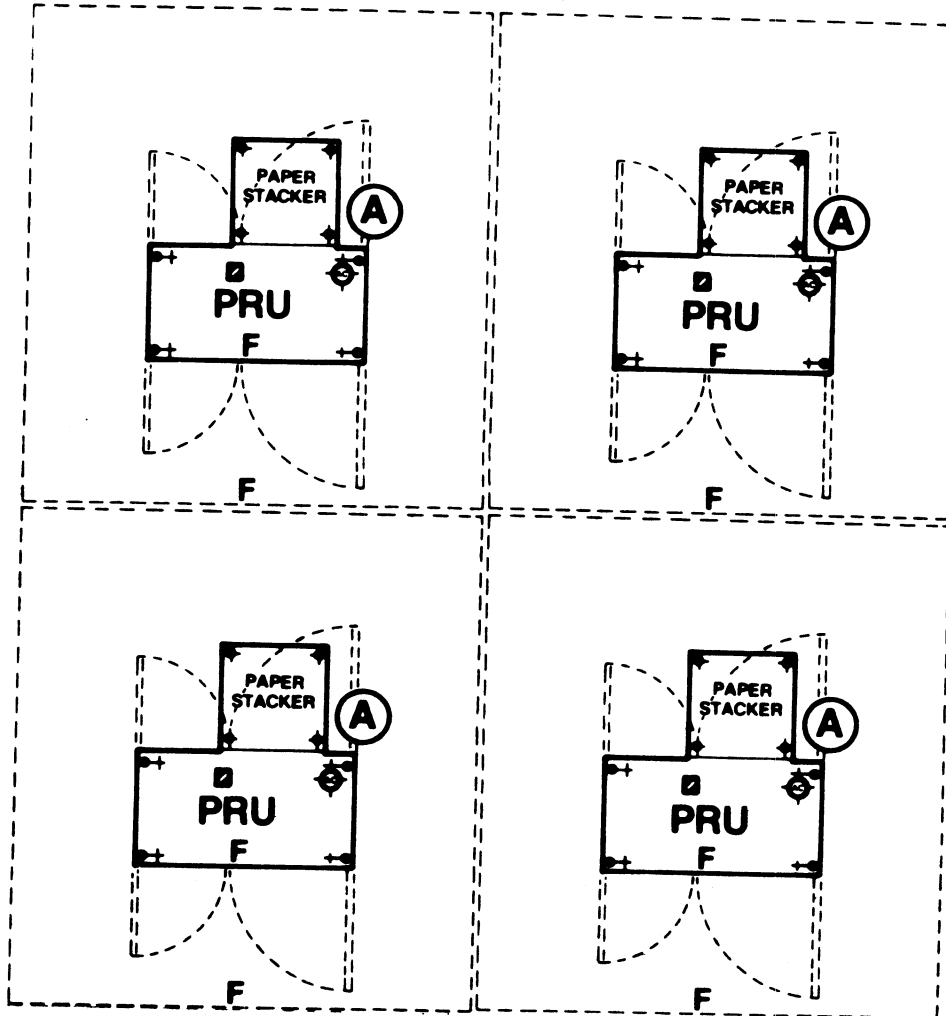




PRU0901, PRU1201 -- HIS 7526



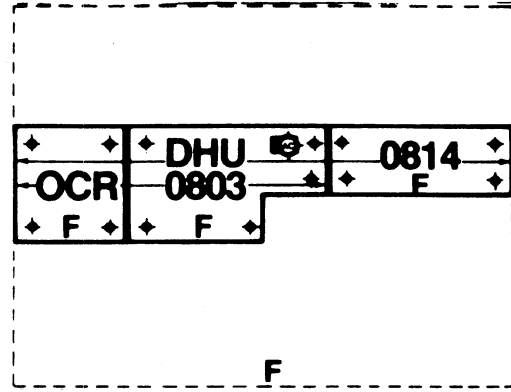
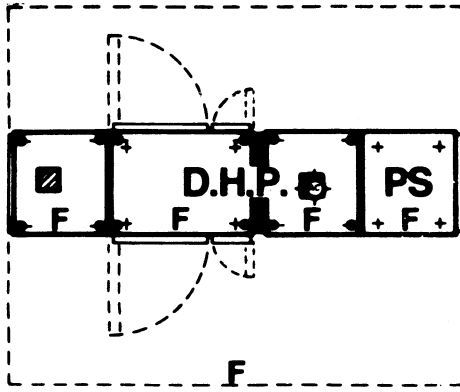
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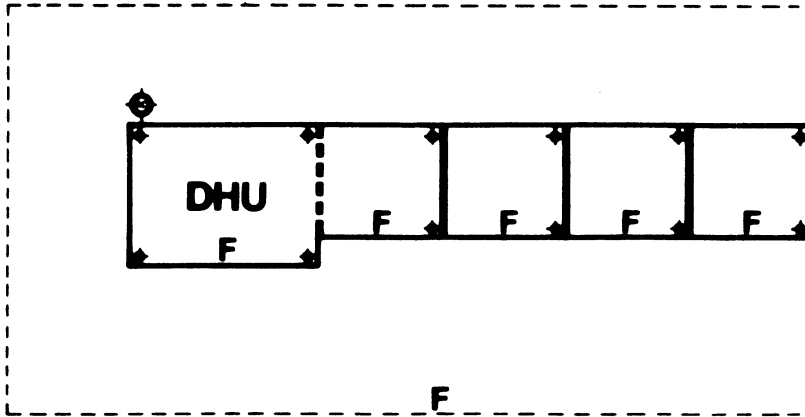


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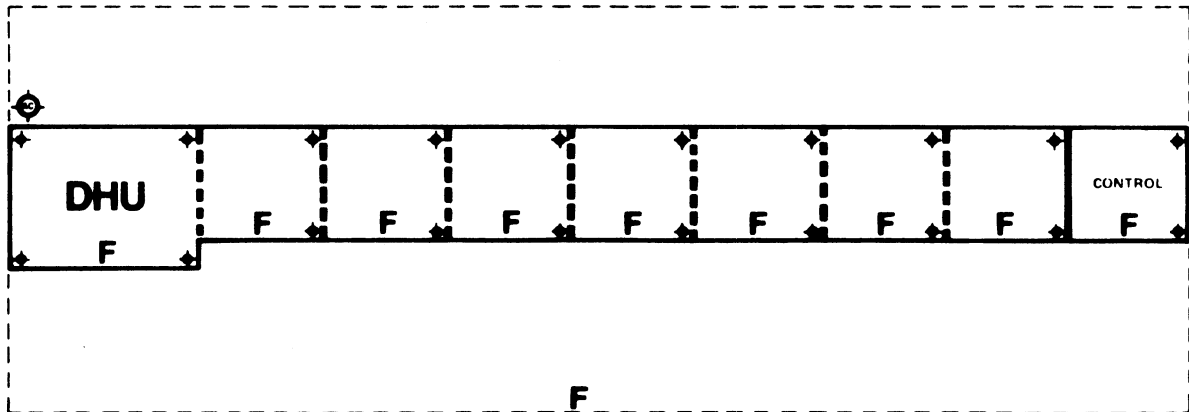
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DHU1604-DHU1616 -- HIS 7530

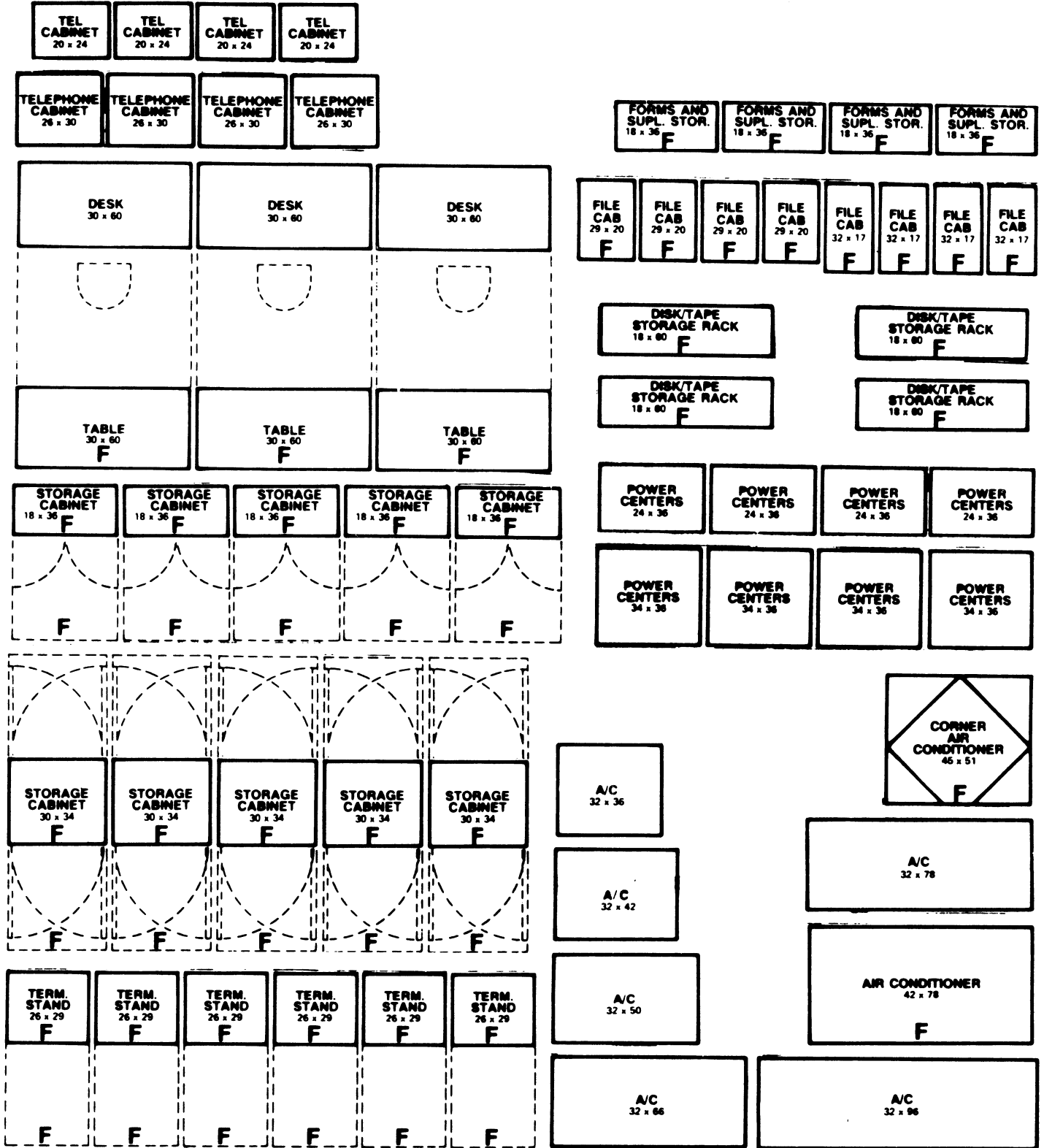


DHU1620-DHU1632 -- HIS 7531





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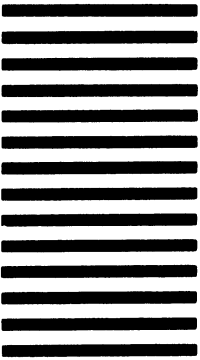
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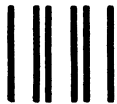
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